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AMATEUR RADIO

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EDITORIAL

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T.V.I.

With television just around the corner, workers in our chosen field will experience a decided tightening of the conditions under which we will operate without causing interference to the new art. At this stage of the game, most of us have had perforce to study harmonic suppression in some degree to keep the household b.c.l. set trouble free.

But with the possibility of t.v.i. on top of this the onus will be very much on the Amateur to put only a non-interfering signal on the air.

He will lose the oft used excuse of the antiquated b.c.l. set, for if television in Australia takes up at the present state of development in Britain, local manufacturers will be turning out reasonably high quality gear from the start, capable of giving optimum results only with receiving conditions at their best. The situation seems to call for extensive research by the t.v. manufacturers, and those specially appointed technical committees who have for some years been studying and eliminating electrical interference.

The Government would be wise to co-opt these committees at this early stage and publish findings for the information and use of all potential creators of QRM including the licenced Amateur.

Only by such co-operation will we retain sufficient "arm room" to use the bands for our experimental purposes as we are entitled to, without becoming involved in the troublesome task of finding our own way out of difficulties which could, with reasonable knowledge and precaution, be avoided.

—P. E.

The Contents . . .

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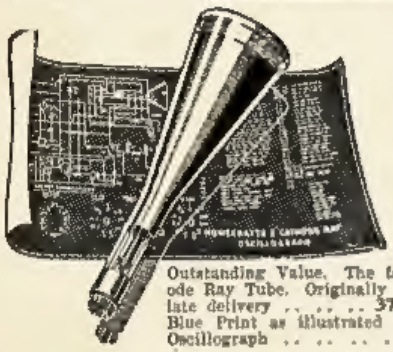
GREATEST BARGAINS LARGEST STOCK



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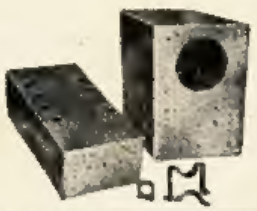

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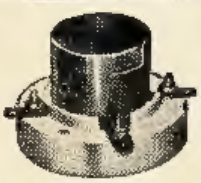

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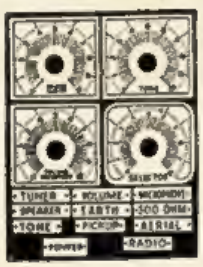

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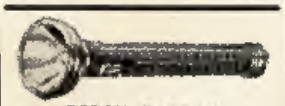

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A De Luxe Vacuum-Tube Voltmeter

PART II.

By J. DUNCAN†, VK3VZ, and A. P. THORNTON‡, VK3IY

After reading the theoretical development of the v.t.v.m. in the last issue, we now turn to the practical problems associated with the construction of an instrument of this type, suitable for the parts readily available in Australia.

Let us study the circuit diagram of Fig. 1. In dotted lines at the upper left is the r.f. probe, the entire EA50 rectifier of the instrument, together with its r.f. input capacitor, C1, a.c. load resistor, R1, and filter capacitor, C2. For low-frequency operation, C1 is dropped out and C3 picked up through suitable contacts actuated when the probe is pushed into the instrument. Rectifier-developed contact-potential is balanced out by the second EA50 and switch S-2C. The desired balance potential is selected from the resistor stick consisting of R2, R3, R4, and R5. Since this is required only in a.c. operation, the function switch head, S-1A, either includes or omits it from the grid circuit of the lower balancing section of the 6SN7GT cathode-follower.

Switch S-1F switches the "high" input jack about for desired functions, while the 30 megohm resistor pairs, R6 and R7, provide the 2.5 voltage multiplier for the six d.c. ranges of 7.5 through 3,000 volts maximum at the 3,000 volt panel jack. Switches S-1E and S-1F switch the a.c. rectifier output and the d.c. input to the top of the range stick, R8 through R13 with the desired range selected by the range switches S2.

Since it is not desirable to have the primary cathode follower always to have its grid connected to S-2B, switch S-1B is arranged to disconnect it therefrom for resistance measurements, or to ground it for current measurements. The range head switch S-2D selects suitable resistors, R14 through R19, for the six resistance ranges and connects the dry battery B.

R20 and R21 are the two cathode follower load resistors, to the "high" ends of which the grids of the meter-actuating 6SN7GT are connected permanently. The function switches, S-1C and S-1D, shift the meter itself to suit the selected function, and also to serve to reverse polarity for differing d.c. input polarities. The wire wound adjustable resistor R22 is used to set the d.c. voltage ranges on the meter scale, establishing full scale reading for the 3 volt input (or 2.5 volt if chosen), which serves to place all d.c. ranges in proper step.

Switch S-2A selects the different a.c. range-set resistors, R23 through R26, which are required for the several a.c. voltage ranges. Switch head S-2E, in conjunction with resistors R27 through R32 establish the six direct current ranges. R33 is the front panel ohms adjust control, used to set the meter reading to full scale before starting resistance measurements. One setting of the knob serves for all six resistance ranges. The remaining parts have been sufficiently discussed in Part I., with particular reference to Fig. 6 as to necessitate no further definition.

There is one other point. This instrument is literally **self-testing**. By means of its voltage functions, every internal operating voltage may be measured by the v.t.v.m. itself. Likewise the values of the voltage divider-stick resistors, contact potential balance and current-range resistors may be measured by the vacuum-tube voltmeter. In practical fact, only the resistance-range resistors may not be measured without another separate instrument.

The first major difficulty is the range resistors, which must be of ± 1% tolerance. Resistances of this tolerance are

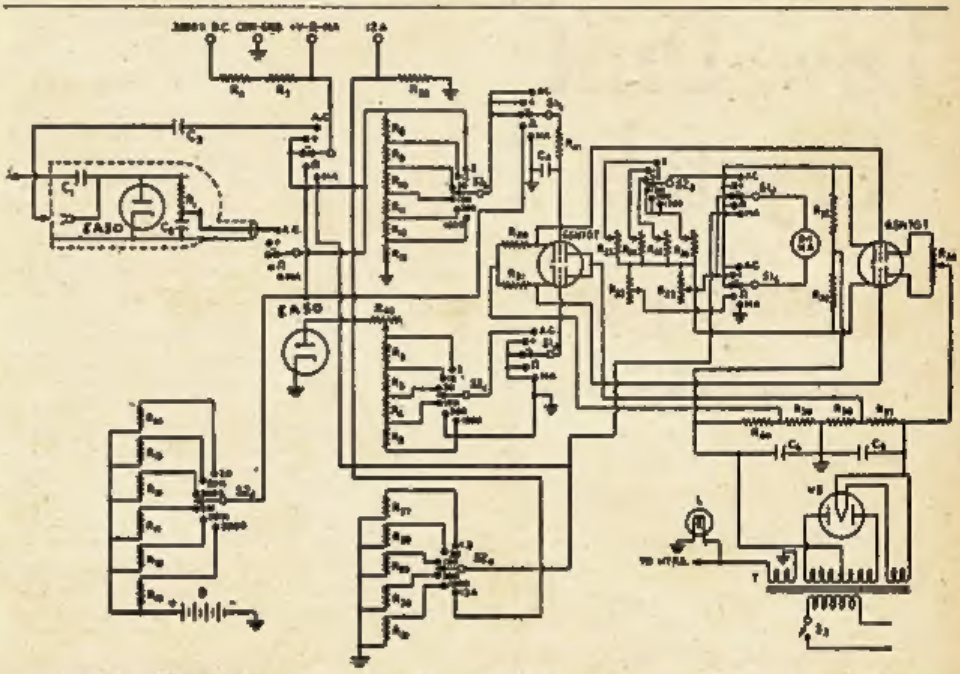

Fig. 1.—Circuit diagram of the Vacuum Tube Voltmeter. With the new setting of R22 to give 2.5 volts full scale, the voltage ranges would become 2.5, 10, 25, 100, 250, and 1,000 volts as mentioned in the text. The 9006s are changed to EA50s, and the altered resistance values are given in the parts list.

C1—0.0005 uF. mica.
C2—0.002 uF. mica.
C3—Three 0.1 uF. 600v. tubulars in series.
C4—0.005 uF. mica.
C5, C6—8 uF. electrolytics.
R1—16 megohms 5% tolerance. (Must be small, in r.f. probe).
R2—10 meg., ½ watt.
R3—2 meg., ½ watt.
R4—1.75 meg., ½ watt.
R5—0.1 meg., ½ watt.
*R6 + R7—60 meg. for x 2.5 multiplier (10 x 6); or 40 meg. for x 2 multiplier (10 x 4).
*R8—30 meg. (10 + 10 + 10)
*R9—6 meg (5 + 1).
*R10—3 meg.
*R11—0.6 meg.
*R12—0.3 meg.
*R13—0.1 meg.
*R14—10 ohms.
*R15—100 ohms.
*R16—1,000 ohms.
*R17—10,000 ohms.
*R18—100,000 ohms.
*R19—10 meg.
R20, R21, R41—5 meg. 5% tolerance.
R22, R23, R24, R25, R26, R34—2,500 ohm w.w. pots.
R27, R28, R29, R30, R31—0-1 Ma. meter shunts.
R32—Set experimentally to give 10 amp. range.
R33—10,000 ohms w.w. pot.
R35, R36, R37, R40—40,000 ohms 5% tolerance, 2 watts.
R38, R39—4,000 5% tolerance, 1 watt.
S1 a, b, c, d, e, f—Three banks each five position two-pole.
S2—Five banks each five position one pole.
T—250/250 volts at 40 Ma. with two 6.3 v. fil. windings or one 5v. and one 6.3v. winding.
V5—6X5GT.

* Denotes ± 1% tolerance.

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available from I.R.C. in Sydney, or through the Melbourne distributors, "Australian Engineering Equipment." It is not always possible to obtain them all from stock in Melbourne, but they can be supplied to order after a short wait. The original values were not very helpful, the resistance values of the voltage divider "stick," being 37.5, 7.5, 3.75, 0.75, 0.375, and 0.125 megohms. These values are obviously difficult to make up, and it was decided to alter the value of the range "stick" to obtain more even values, so the overall resistance of the "stick" was reduced slightly from 50 megohms to 40 megohms, which brings the individual resistances to 30, 6, 3, 0.6, 0.3, and 0.1 megohms, all values which are easier to obtain.

The highest value obtainable in the 1% tolerance at the time of building the instrument was 10 megohms, so the value of 30 megohms is made up of three 10 megohm 1 watt resistances in series. The diode load resistor has to be altered to keep the right proportion, and is changed to 16 megs., made up of a 10, 5, and 1 meg. bank of resistances in series.

It was further decided that the additional terminal which is used to multiply the scale readings should be changed to give a multiplication of 2.

As it was desirable to use a 0-1 milliammeter, and it was simpler to retain the existing 0-1 scale, the fundamental ranges were altered slightly. No alteration to the circuit values or the divider "stick" are entailed, the d.c. resistance range potentiometer R22 being adjusted so that full scale deflection is 2.5 volts instead of 3 volts as originally. The voltage ranges then become 0-2.5v., 10v., 25v., 100v., 250v., and 1,000 volts, and by using the extra terminal we have additional ranges of 0-5v., 50v., 200v., 500v., and 2,000 volts. Note how these ranges fit in between the main ranges.

In practice, the existing scale of the meter is given some additional figures against the 0 to 1 scale and is marked 0-25 under the existing calibrations. It may be possible to obtain a 0-1 milliammeter with this scale marking as it is the standard marking for a multimeter scale. An additional calibrated range is required for the 0.25v. a.c. range only, as this range is not quite linear. If approximate readings can be tolerated, the main range can be used, but for accurate work it will be necessary to hand calibrate against another meter, any a.c. meter with a low voltage scale would be suitable.

The ohms range is easily obtained, either by calibrating against an ohm meter, or alternatively, by using the 0-1 scale, and by calculation, enough points can be obtained to plot in the complete ohms scale. A list of calibration points in terms of the 0-1 scale is appended.

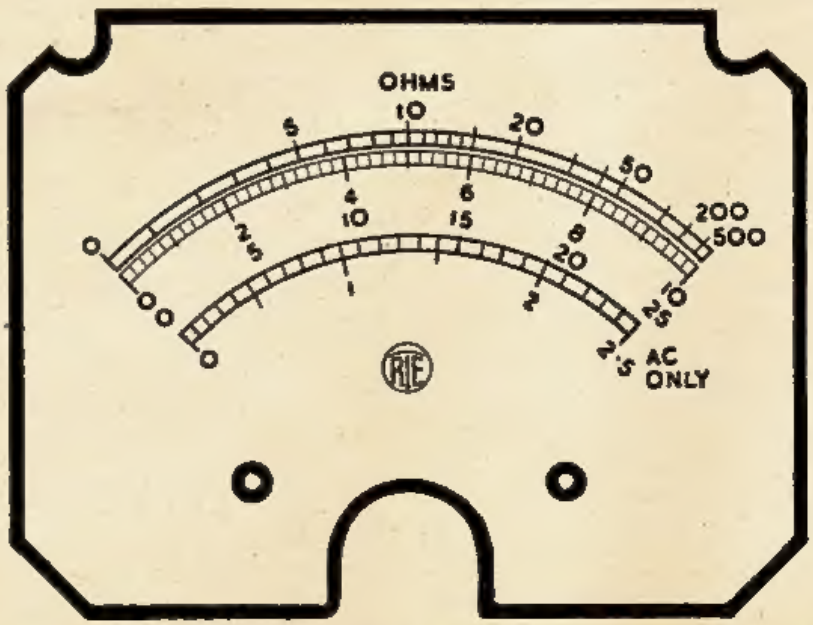
Another advantage in using the existing 0-1 Ma. scale is the fact that standard shunts can be used for the milliampere ranges.

If it is decided to utilise the original idea of hand calibrating all scales and using the 0-3v. as the fundamental, it is advisable to retain the original scale multiplier, and multiply the scales by 2½, in which case the terminal resistance R6 + R7 would be 60 megohms (six 10 meg. in series).

After all it is merely a matter of choice which set of scale ranges are used, personally the writer preferred the 0-2.5 volt fundamental range in preference to the 0.3 volt, because it was felt that scale calibration could be simplified. The two main advantages of using the 3 volt range, are firstly, a 3 volt battery can be used to set the full scale adjustment for the d.c. ranges, and secondly the maximum voltage which can be measured by the instrument is increased, as with the aid of multiplier, voltages can be read to 3,000, as against 2,000 volts with the other scale. The switches in Fig. 1 are marked for the fundamental 3 volt range, it will be observed.

The next main problem is the choice of switches, which need to be ceramic, due to the voltages handled, and also to eliminate leakages between switch contacts; the second point being very important when we consider the high value of resistances between some of the resistance "stick" contacts, and also the fact that the high resistance range is capable of measuring well over 200 megohms.

The function switch consists of three banks of 5 x 2, which is a standard switch, and is readily available. One bank S-1D and S-1C could be an ordinary bakelite if desired, to reduce the cost. The voltage selector switch has



Full Scale Dial Calibration for University 0-1 Ma. standard square type 4" Meter.

six positions and is therefore a little more difficult to obtain. One possibility is to cut the voltage ranges to five and use a standard switch, but this causes a serious gap in the ohms ranges and is not recommended. The best alternative is to use five banks of twelve contacts, and only use those required. Quite a few six position switches are about however, and no difficulty should be encountered on that score. Two banks S-2E and S-2A could again be in bakelite.

The only other main alteration in the circuit was the adoption of EA50 diodes in place of the 9006s, this was done because of their lower inter-electrode capacity, and also their smaller physical size, important when designing the r.f. probe. The changing of these valves brought about a change in the values of the diode balancing resistors, and it is advisable to place them in an accessible position so that they can be altered if necessary. The method is simple. Set the v.t.v.m. to a.c. and switch to the 1,000 volt range, adjust the zero set to give zero on the meter scale, which will coincide with the d.c. zero, and then move the range switch progressively towards the 2.5 volt range, checking the position of the meter needle to see that it coincides with the zero point at each setting. If it varies on any range the resistance below the tapping point will need alteration. If the needle is above the zero point the resistance will need to be increased, and visa versa. On the 2.5 volt range the zero adjustment is done by the potentiometer R42, which should give a reasonable variation above and below the zero point. If it does not do this, change the value of R2. Naturally these adjustments must be made with the r.f. probe in circuit as we are balancing one diode current against the other.

One other alteration was found necessary to the circuit, and that was the use of a separate filament winding for the cathode follower. This was due to the fact that the cathode resistance is 5 megohms, which is virtually between the cathode and filament of the 6SN7GT and it was necessary to supply this valve from the spare 5 volt filament winding on the transformer, which gave quite adequate voltage, and also enabled the winding to be left floating above ground, thereby removing the chances of cathode to heater leakage, with some 6SN7GT.

The remainder of the circuit is quite straight forward, and needs little comment, the only point to remember being that we are dealing with two balanced circuits in the two 6SN7s and therefore any lack of balance in the two opposite halves of the circuit will result in a position arising where it is impossible to zero set the meter. To overcome this see that the two 40,000 cathode resistors in the cathode circuits of the 6SN7 meter tube are of the same value, it is more essential for them to be the same value than exactly 40,000, so select a pair matched on an ohm meter.

The same remarks apply to the balanced voltage divider across the power supply, and in checking with a 1,000 ohm per volt meter on completion, the voltage between the ends of the two 40,000 ohm resistances should be 175 volts, and across the outer ends of the 4,000 divider resistances 12 volts, and measured to ground, —87½ volts, +87½ volts, —6 volts, and +6 volts, respectively. It is not essential to have these exact voltages, as long as the two halves of the divider balance.

If all resistances and voltages are balanced, the meter should read zero with the "zero set" control at about mid scale.

OHMS CALIBRATION LISTS

Ohms	3v. Scale	0-1 Ma. Scale
1	0.273	0.091
2	0.5	0.166
3	0.692	0.231
4	0.856	0.285
5	1.0	0.333
6	1.125	0.378
7	1.235	0.412
8	1.335	0.445
9	1.425	0.475
10	1.5	0.5
12	1.636	0.545
14	1.746	0.582
15	1.8	0.6
20	2.0	0.666
25	2.142	0.714
30	2.25	0.75
35	2.335	0.778
40	2.4	0.8
45	2.45	0.817
50	2.5	0.833
60	2.57	0.857
70	2.63	0.876
80	2.665	0.888
90	2.7	0.9
100	2.73	0.91
150	2.81	0.937
200	2.855	0.952
300	2.905	0.968
400	2.928	0.976
500	2.94	0.98

If the 0-1 milliammeter is reasonably linear, the table above will give sufficient accuracy to enable the ohm scale to be plotted in terms of the 3 volt, or original 0-1 scale, whichever is used.

ADJUSTMENT

D.C. Ranges.—Turn the function switch to d.c. plus and the range selector to the 2.5 volt range, adjust the "zero set" control for zero on the scale. Connect a fresh 1.5 volt battery to the leads and adjust potentiometer R22 for correct scale reading. All d.c. ranges will now be correct.

Turn the function switch to d.c. minus, reverse the battery, and it should again read 1.5 volts, if not the 6SN7s are not operating on the straight portion of the curve, and the cathode resistances will need checking, however, no trouble was encountered on this score in both models built up.

A.C. Ranges.—Switch the function switch to a.c. and the range selector to 2.5 volts. A suitable voltage of 2.5 volts is taken from the filament winding of a transformer through a 600 ohm potentiometer, to give a source of variable voltage, and an a.c. meter connected across the output. The potentiometer R23 is now adjusted to give full scale deflection on the v.t.v.m. The special scale for this range can now be calibrated.

The range selector is then changed to 10 volts, and with a source of 10 volts a.c. from a few filament windings in series, the potentiometer R24 is adjusted for full scale reading.

The same procedure is then adopted for the 25 volt and 100 volt ranges with R25 and R26, it being assumed, of course, that the adjustment of the diode balancing resistances, mentioned previously, had already been carried out. All a.c. measurements and measurements of audio frequencies must be carried out with the external leads, as

the r.f. probe has not sufficient series capacity to function below high audio frequencies.

Ohms Range.—Switch the function switch to ohms, and adjust the "ohms set" potentiometer for full scale with the leads open. Connection of a resistance between the leads will cause a reduction in the meter deflection, and the value of the resistance can be read off. Values of resistance from about 0.5 ohm to over 200 megohms can be obtained, depending on the setting of the range selector.

In checking values of resistance above about 100,000, this meter is far superior to the average multimeter. As an example, on the ohms x 1 meg. range, 10 megohms is half scale on the meter.

Milliampere Ranges.—No explanation is necessary here as the 0-1 milliamp. meter is simply connected to the external terminals and suitable shunts switched across it for the different current ranges. The inclusion of current ranges in the v.t.v.m. is simply to enable the instrument to replace the usual multimeter for bench work.

REVIEW OF USES

Well there it is, and before discussing the practical construction, let us review the unit and its possible uses. Only some of the uses can be reviewed here, as it would require much more space than is available to cover them all.

On d.c. ranges, voltages from 0.2 volt to 2,000 volts at 40 and 80 megohms input resistance, enables us to measure a.v.c. line voltages, grid voltage on oscillators, screen and plate voltages on speech amplifiers simply by placing the test prod on the appropriate point. There are many other applications where it is necessary to use a very high input resistance to obtain accurate results which will occur to the reader, but the ones mentioned above are the main ones in our applications.

To give an idea of the small amount of current drawn from the source of supply in d.c. measurements, the writer found that the voltage of a 4.5 volt battery could be measured quite accurately with the body in series with the test prods.

On a.c. measurements, it would take quite some time to enumerate the many applications this v.t.v.m. has for Amateurs, as it operates from 20 cycles to 100 megacycles, over the range of voltages previously mentioned, but to take a few at random.

All common a.c. measurements at 50 cycles; checking of voltage gain in audio equipment; r.f. operation and amplification; a sensitive neutralisation indicator, etc.

By connecting a small tuned circuit between the probe and its shield it can be used for tracing parasitics and r.f. which has strayed from its proper path. Maybe we should conduct a competition to see who can think up the most uses for this v.t.v.m., but the list could be a very long one.

The ohms scale and the milliammeter ranges don't need any elaboration, but it has surprised the writer on checking through his stock of resistances, how many of the larger values are open circuited internally. Many were consigned to the w.p.b. that would have caused much grief and woe if they had been used at some later date.

One final point. This meter can be used for reading the mains voltage, but remember the negative terminal on the v.t.v.m. is connected to earth through the 3-pin mains plug, so only use the active lead in reading mains voltages. The fact that the v.t.v.m. is connected to the mains at all times must be remembered, and if it is necessary to measure resistances in a receiver for example, which are above chassis potential, see that the mains plug to the receiver is removed, otherwise the chassis of the v.t.v.m. and the Receiver will be connected together through the earth pins on the mains plug which will cause false readings.

If negative voltages have to be read, the a.v.c. line in a receiver for example, the ground side of the v.t.v.m. is connected to the chassis of the receiver and the active prod applied to the a.v.c. line with the function switch on d.c. The marking of the test prods red and black to represent positive and negative is misleading, and if the red prod is considered in all cases as the active lead no confusion will arise.

Whilst on the subject of test prods, there are several points to watch. Firstly it was found necessary to have the active prod lead shielded for measurements of a.c. voltages on the lower ranges, because of the sensitivity to 50 cycle pickup. It was possible to obtain quite a fair deflection on the 2.5 volt range with the test lead lying near a power transformer, so in addition to the normal lead terminal, a co-ax outlet was installed and a shielded lead made up with a piece of co-ax cable. Also as mentioned in the first section of the article, a double ended prod is required, one end having a 2 meg. resistor in series, for measurement of a.v.c. and oscillator voltages without applying any additional capacity to the circuit being measured. This enables a.v.c. voltages to be measured at the grid caps of the i.f. stages in a receiver, without detuning the stages. The addition of the 2 meg. resistance will introduce a slight error, in this case the reading will be 5% low, which can be allowed for mentally.

A commercially built r.f. probe of bakelite construction is available and could be used. It is suggested, however, that the outer barrel be shielded which can be done easily by sticking tinfoil inside the barrel and grounding. The insulation of this probe is only bakelite, and it is doubtful how it would operate at about the 100 megacycle range. If possible a polystyrene bush should be fitted to the probe to overcome that difficulty.

When the probe is not in use it is necessary to have an arrangement whereby the low frequency condenser C3 is connected into circuit. It is important to note that the lead from this condenser to the point of connection in the r.f. probe should be short, and have as little capacity as possible. Any capacity existing between the diode in the r.f. probe and where the extra capacity lead plugs in, is virtually additional capacity across the diode when making measurements, and we are endeavouring to keep this as low as possible. In the construction of the instruments to follow, this point has been taken care of quite nicely.

CONSTRUCTIONAL DETAILS

The first vacuum-tube voltmeter built was entirely conventional in construction, and consisted of a chassis 11" x 7¾" x 2½" deep. The layout of components is shown in Fig. 2 and is self explanatory, the r.f. probe being placed in the inside of the cabinet when not in use. A duplicate miniature 4-pin socket is located on the front panel for use with the r.f. probe.

It is usual for the r.f. probe to be arranged that it can be plugged into the front panel, but it was felt that it would be better to put the r.f. probe in the cabinet to avoid having leads out on the bench which could be in the way.

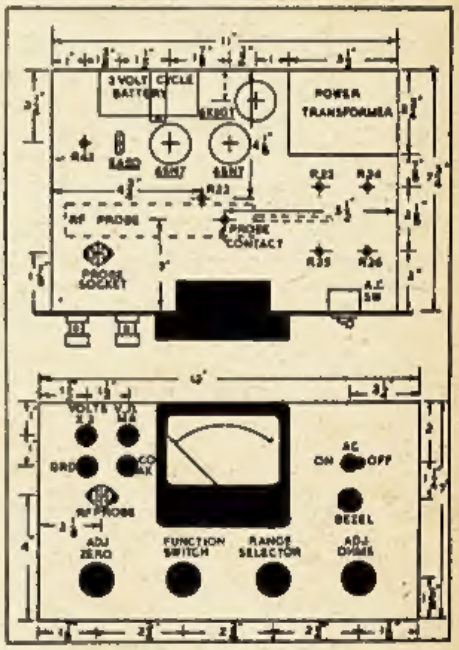


Fig. 2.

It is advisable to make a careful check of the size of components to be used, as there is not a great deal of room to spare.

One of the main difficulties from a space point of view, is the problem of locating all the voltage, diode balancing, and resistance resistors. When it is realised that each resistance shown on the diagram is made up of two 1 watt resistances in series, the space requirements are large. This problem was overcome by constructing several resistance strips of Polystyrene, complete with mounting lugs, and wiring them to the range selector switch with 18 gauge tinned copper wire, so that they are self supporting. The resistances are then wired in place, and the switch bank, complete with resistance strips,

slipped into place, and the necessary connections to the remainder of the circuit made.

In the event of a fault developing in the switch bank or resistance strip, the whole unit can be removed, by unsoldering a few wires.

No details are given of the r.f. probe as it is felt that ideas will differ considerably on this matter, but as a matter of interest, the probe used in this instrument is 6" long and 1" in diameter.

The outer shield is a piece of 1" diameter brass tubing, and inside it is slipped a section of bakelite tubing, which has been split lengthways down the centre. Only one half of this tubing is used, and two circular ends are fitted to it, one of Polystyrene for the probe contact, and the other to take the lead connections.

The components are mounted in this bakelite "trough," and the brass tubing slipped over afterwards. A hole is fitted in its holder on the chassis.

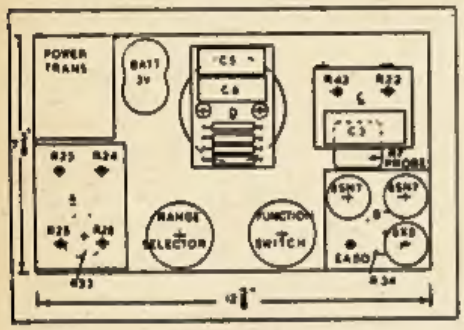


Fig. 3.

ALTERNATIVE LAYOUT

The second vacuum-tube voltmeter was built as shown in the rear view of Fig. 3. Four small sub-panels (A, B, C, and D) were constructed, all except panel B being of insulating material. These panels are mounted on pillars to keep them clear of the front panel components, which in some cases are located underneath. Panel D is supported by the two meter terminals, and carries the electrolytics, C5 and C6, and the voltage divider resistances for the power supply.

The r.f. probe in this case is built into an old i.f. can, and when plugged into the front panel, picks up the connection for C3 on panel C. This panel also supports the d.c. range set resistance and the diode contact potential balancer.

Panel B carries the two 6SN7s, 6X5 rectifier, and EA50 balancing diode. It is mounted sufficiently far from the front panel to clear the zero set resistance R34.

Panel A carries the four a.c. ranges set resistances and is also mounted so that it will clear the ohms set pot. R33.

All main voltage "stick" resistances, ohms, and diode balancing resistances are mounted around the range selector switch, or if desired, resistance strips can be made up as previously mentioned.

The main circuit wiring is cabled to present a tidy appearance, and it is felt that this method of construction is easier, and more accessible than the first unit built.

It must be stressed that a few of the components vary in size and it is advisable when making up the small panels to make sure they are of sufficient size to take the components on hand.

FORMULA FOR DIFFERENT VALUES OF VOLTAGE "STICK"

For those who want to calculate different values of tappings for the voltage "stick," the following simple formula will serve.

$$R_x = \frac{R \times V_m}{V}$$

where V = voltage range required at tap.

V_m = Fundamental range of v.t. v.m.

R = Total value of resistance "stick" required.

R_x = **Total** value of resistance **from earth to tap in use.**

E.g.—For 1,200 volt tap—

$$\frac{40 \times 3}{1200} = 0.1 \text{ meg. from tap to ground.}$$

19th Federal Convention Action on Motions Carried

As a result of Agenda item 31 of the 19th Annual Federal Convention, the Federal Executive were directed by Federal Council to publish three months before the next Convention, dated summary of action on motions passed at the previous Convention. In accordance with this motion, the motions which were passed are enumerated below with the action resulting therefrom. Interested members should refer to the June 1949 issue of "A.R." wherein will be found on page 14 the voting and the form of motions.

AGENDA ITEMS

Item 1. VK3WIA has been temporarily operating from VK3UM, mainly keeping schedules weekly with W1AW, and occasional contacts with the R.S.G.B. and the N.Z.A.R.T.

2. Noted for future policy.

4. Action complete and promulgation of amendment made.

6. Endorsement of previous policy.

7. All Divisions have agreed to an increase in price to 7d. per copy. The Victorian Division, as publishers, send out three-monthly statements of the finances.

8. Adjacent frequencies not agreed to by P.M.G., but permission granted to operate the Emergency Nets on 3501 and 7002 Kc. These frequencies are for practice purposes, but should the occasion warrant, any frequency may be used.

10. Action taken by writing three consecutive Editorials on the subject and in re-publishing from time to time in Federal Notes.

16. The P.M.G. would not consider this suggestion with the great amount of additional work to put it into operation. The two licences are now handled by different Departments.

17. As Federal Executive, contrary to the motion, were not able to supply the P.M.G. with any instances of hardship, they would not agree to the motion They consider the present system to work very efficiently and have had no complaints from Amateurs.

21. All Divisions with the exception of the N.S.W. Division have appointed observers, but very few reports are to hand from those appointed. The P.M.G. have not been able to take any action with other Administrations so far, as the Provisional Frequency Board is still sitting in Geneva, and channels have not been finalised. Federal Executive, however, are determined to build up a file with the Department, which makes consistent reporting important.

23. Rules for permits contained in Federal Notes elsewhere, but Dept. will not grant privileges to all.

26. This motion, proposed by the W.I.A., is at present before the vote of the member societies of the I.A.R.U Copies of the "A.R." are now sent to all member societies, so that results may be copied.

28. Action complete as this Rule was clarified in the 1949 VK-ZL Contest.

31. Action taken.

32. Policy, and noted by Divisional Councils.

33. For the policy book and all future Conventions.

GENERAL BUSINESS ITEMS

Item 1. Rules finalised and published.

2. As the Contest Manager and Contest Committee had extreme difficulty in formulating rules to suit equitably all States in an all band v.h.f. contest, the matter was referred to all Divisions for comments and suggestions which were few and did not solve the problem. As several Intrastate Divisional V.H.F. Contests are in progress, something valuable may be learned from these before an Annual W.I.A. V.H.F. Contest is inaugurated.

3. Conditions set out in 1950 N.F.D. Contest.

4. Has been in operation since the 19th Convention.

5. This was included in 1949 Rules.

7. Publication of bands allotted has been made.

8. The P.M.G. would not agree to this motion from the security angle and monitoring position.

9. Again, as no specific cases could be quoted, the P.M.G. considered the present system to be satisfactory; but would notify their State Superintendents of the correct interpretation of this regulation.

10. This protest has been registered with the P.M G. and filed.

12. Advice received that the most space available would be every four months. This has been supplied on regulations and other topical matters.

14. All Divisions in favour with exception of Queensland.

16. The P.M.G. did not agree that the A.A.C. should be concerned with such matters, but undoubtedly, unofficial advice would be given if desired. The present system works efficiently and Inspectors are very co-operative.

18. All Divisions agreed to this motion, and it has been noted for future policy.

20. Published in Federal Notes of "A.R."

21. The first draft has been received and is being considered before passing to Divisions for their comments.

22. This motion is the actual amendment to the Federal Constitution and has been promulgated—supercedes Agenda item 4.

25. The 20th Annual Convention will be held in Melbourne at Easter, 1950, the 7th, 8th and 10th April.

Such are the results of the motions of the 19th Annual Convention, and represents some of the work of your Federal Council, in general, and Federal Executive, in particular. We trust the reading of this summary in conjunction with the motions has proved helpful to members, especially those in the country. All motions not shown, of course, were lost or rejected.

—W. T. S. Mitchell, Fed. Sec.

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

FEBRUARY, 1950

Nine of the charts, prefixed by the letter "C" for Canberra, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "P" for Perth, are for Western Australia.

The Canberra charts refer to the following world zones:—

Zone	Region	Terminal
1	Western Europe	London
2	Mediterranean	Cairo
3	N.-West America	San Francisco
3a	N.-East America	New York
4	Central America	Barbados
5	South Africa	Johannesburg
6	Far East	Manila

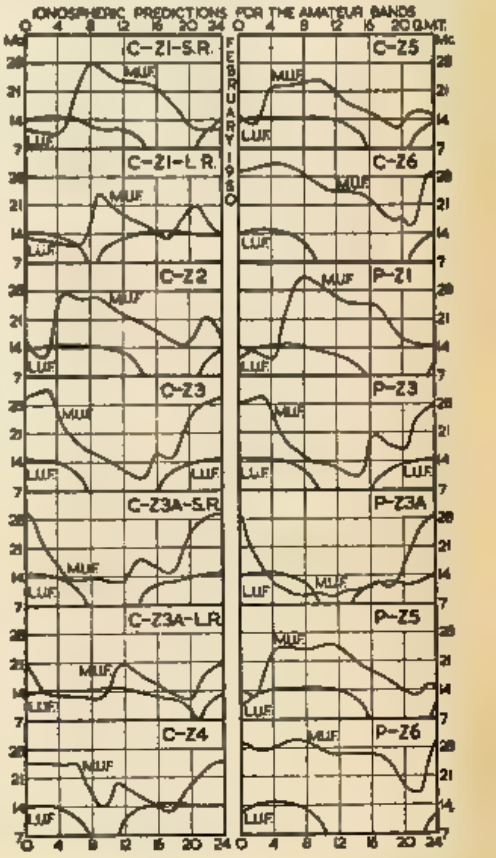
The Perth charts are similar to those based on Canberra.

QUIZ

The Prediction Service welcomes comments on the accuracy of its predictions. In particular, answers to the following questions on the Canberra-San Francisco circuit would be useful:—

1. Were good conditions experienced on 7 Mc. for the period 0800 to 1600 hours GMT?
2. Was the 28 Mc. band workable for a few hours around midnight GMT?
3. Was the 14 Mc. band workable only between 0500 and 1000 hours GMT?

Answers to the Quiz should be sent to the W.I.A. and should, if possible, refer to consistent results obtained on the majority of days in the month.



FIFTY MEGACYCLES AND ABOVE

Compiled by J. K. RIDGWAY, VK3CR.

Good DX conditions, plus the stimulus of the Contest, have made 50 Mc. a very popular band during the past few weeks, but it remains a mystery why a great percentage of stations still use only the first megacycle of the band, with the result that at times it becomes difficult to know whether one is listening on 5 or 10 metres.

An illustration of this was given on 2nd January during the break through from VK2 to VK3, when conditions became almost chaotic at times and many stations were forced to retire from the running. During this break through, VKs 2LY and 3ABA conducted test on 54 Mc. with S9 results, indicating that the openin gwas not confined to the low frequency end of the band only. So what about it chaps! If you cannot spread out a little will you please tune the entire band and give those who do operate on the higher frequency end a chance

VK5JD is now "on location" at Alice Springs and has already contacted VK2, VK3 and VK5 although full details are not yet to hand. The lucky VK3 station was VK3BO who made contact with 5JD on 17th January. The contact was on c.w., as 5JD has no modulation equipment with him.

HIGHLIGHTS OF THE MONTH

50 Mc.—18th December, 1949 VK2AH VK2BC, VK2VW VK2BC, VK2RU VK2BC 31st December, 1949 50 Mc open from VK3 to VK6 from 1600 to 2230 hours with signals at S9 most of the time VK7XI-KH6IPP Details as yet unknown.

144 Mc.—11th December, 1949: VK3LS on Mt. Bogong to VK3AKE at Geelong, a distance of 190 miles.

576 Mc.—11th December, 1949 VK3ANW on Mt. Donna Buang to VK3AKE at Geelong, a distance of 90 miles.

50 Mc. ACTIVITY

NEW SOUTH WALES

The band has been practicularly good with regard to DX openings which are too numerous to mention. Notable are the ZLs and VK6s. Many have worked these now and the strength of VK6 signals has been surprising. Local contacts have usually been very brief except when DX indications are very definitely negative.

The 18th December, 1949, was a gala day for 2AH who, after many attempts earlier to contact VK2BC, made an excellent S9 QSO with Graham. It will be remembered that 10 metres had been used for "teeing-up" 6 metres while Graham built up his xmitter for six. 2VW had excellent QSO and then fading set in after about one hour. He was hearing 2WJ S8, but John had a severe power leak which made copy very difficult. Later 2RU made contact with VK2BC. During the first break through, ZL1C was also hearing VK2BC and they QSOed.

ZLs have been contacted almost around the clock up to midnight on 4/1/50. Early morning (0400) QSOs were also possible. VK3 to VK2 (Sydney) on the 2nd was a real break through.

The ZL-VK6 contact is further evidence of what can occur. 6WG has worked all States (except N.T.) in a few hours. The most sought after VK is 5JD who is operating from Alice Springs, the State required by all for W.A.S.

2BW, 2ADE and 2ALS have been heard in Sydney or Katoomba. 2ANU, with 4 watts input at Maswellbrook, a distance of 110 miles, has been worked cross-band 6 and 2 with Sydney. Doug made this first contact both ways on 6 and 2 which is very rare. Single 807 on six and three element beam and 832 to 3/8 beam on 2 metres, good work Doug. 2AFH and 2XG are both on six and working DX. 2VC has increased the height of his beam and now looks over the hill. Doug worked ZL. 2WH, of Forbes, is being called by DX frequently but so far not heard himself in Sydney.

2ARG (aircraft, mobile) was copied for almost 200 miles while flying at 8,000 feet. The rig is a 815 and 18 watts to long trailling antenna. This antenna, by the way, causes a dreadful hash in the receiver and Bob would like to contact anybody who can suggest the reason. This mobile gear is also fitted into the car and gives surprising results. A "halo" proved to be superior to a dipole. Used while in motion, this signal can be copied over unbelievable country for 25 miles or so. In cuttings, below line of sight, at the foot of sheer cliffs, and between city buildings. (Eight metres is the U.S. police mobile frequency and will almost go anywhere!)

The following visited the northern boys over the New Year week-end 2HO, 2MQ, 2VW and 2AH. The visit was enjoyed immensely. Crammed full of radio and only too short. Shacks visited included 2BZ, 2ADS, 2UF, 2KF, 2KZ, 2ADT, 2VU, 2YL and 2HD! Also en-route. 2AMU, 2QC and 2RU. Radio under difficulties produces much more versatile Hams. They get more out of their gear than the City boys. Some towns have only one Amateur who can't "just call" for assistance. Thanks to the XYLs are also heartily expressed.

VICTORIA

As usual for this time of the year the main source of interest in this band has been the DX which has been regularly breaking through. As far as December is concerned, the trend appeared to be for longer skip, with very numerous openings to VK4 and quite a number to VK6 and ZL. The shorter skip to VK6 and VK8 was almost entirely absent. A summary of DX activity is included as this may be of interest to stations in other States who wish to compare times of openings, etc.

1st of December, 1700-1730 hours: 5FC contacted by VK3s. 2nd and 3rd Patchy VK4 openings. 4th, 0900 1300: VK4 opening, good signals. 1200-1320 VK6s worked by many VK3s. 14th very good signals from VK4, 1100-1800. 16th, 1220-1250 VK2 worked, signals poor; 1700-1740. ZL1s and ZL2s contacted. 18th, 0900-0930: ZLs worked. 19th, 0900-1000: VK4 opening, good signals. 20th, 0900 1330: VK4s contacted, 1130-150: VK6s contacted with good signals. 21st, 0900-1030: VK4 opening. 23rd, 0830-1150 VK4 opening; 1700-1800 ZL4s heard, ZL1s and ZL2s worked. 25th VK4s worked for short periods during the day, 6DW and 6WG worked from 2145 220 26th, 27th, and 28th brief openings to VK4 at various times during day 29th. 1630-1930 ZL1s, ZL2s, and ZL4s contacted 30th, 0800-0900: ZL1s and ZL2s contacted, 1730-1900: VK4s worked. 31st VK4s contacted from 1530 to 1830; VK5s from 1620-1730; VK6s from 1600-2230, VK2s from 1045 to 1745. 1st January, 0800-0900: VK2s worked. 1000-1130 VK5s and 6WG worked. 2nd, 1730-1915 very good opening to VK2 with strongest signals heard this season. 3rd, 1000 1030 VK5s contacted 1430 1900: 2BZ and VK4s contacted. 4th, 1000-1030 ZLs worked; 1645-1930 and 2100-2130: ZL1s and ZL2s contacted; 2230-2330: VK4s contacted. 5th, 0730-0745 and 0845-0915: VK4s worked; 1220-1300: 6FC worked. 6th, 1130-1300: VK2s contacted; 1130-1730: VK4s contacted.

On the 2nd of December, 3ACL worked 7XL on extended ground wave transmission, the distance beign approx. 190 miles with S7/8 signals both ways. This evening, 7XL also heard 3RR in Melbourne, approx. 230 miles. On several other days since, 7XL has been heard weakly by 3XA, but conditions do not seem to have peaked as well as on the first occasion.

Conditions for work with country stations have been good most evenings and many interesting contacts have been made; even during daytime hours good signals have been received from 3UI and 3APF on many occasions. 3ZD, of Warragul, is on the band again with a new rig and converter, the former being a 6L6 c.o., 6V6 doubler, and 815 final modulated by 807s in AB1, and the latter having 954 first r.f., 6BA6 2nd, and 6BE6 mixer. Ron is putting a good signal into Melbourne and working plenty of DX.

TASMANIA

Visitor to the South at time of writing is Len Crooks, VK7BQ, who passes on the information that VK7XL has collected the jackpot in the form of KH6PP and VK6WG. No further information to hand re this, but tentative congratulations George. 7PF reports that first DX was heard on 4/12/49 when 7AB and 7LZ contacted 4XN. Opened again on the 10th. What was thought to be DX on 14th was 2ARG flying over Bass Strait at 8,000 ft. Worked 7XL and 7AB. 2ARG contacted 7AJ on akes while airborne ex-Hobart. Unfortunately 2ARG could not stay on for long.

On 15th from 1750, VK2, VK3 and VK4 were heard until 1830. The next evening saw 7LZ and 7BQ getting amongst the VK5s, between them working 11 stations. VK4s were heard at same time, but went out quickly. The same night 7RK heard 6WG, but Ray has no rig for six. On 17th, 7LZ and 7BQ were called by 4BT but they did not hear him. That night 7LZ shifted from 51.6 to 50.3 Mc. On morning of 18th, 7XL, 7AB, 7LZ, and 7BQ worked into VK2 and VK4.

Some ground wave DX may take place as 7AB and 7XL have both been heard in Launceston. 7PF made his debut on 25th with S32 in p.a. At 1655 on 27th December, ZL4s and ZL1s were audible until 1830. 7PF contacted ZL4IE and 7BQ ZL4CN. Also 7PF heard and called 7AB with no result.

In South, first known opening occurred on the 10/12/49, when 7DH worked 4BT. 4BT has the most consistent sig here. Usually first in and still there who nthe rest have dived back into the noise. Band opened again on 15/12/49 at 1607 to VK2 and 4, while on 16th, ZL2 was worked by 7DH at 1100. At 1217, 4BT pushed hole in the noise closely followed by other VK4s and 2s. Remained open until 1285. At 1950 4XN heralded the approach of VK5 heavy artillery. Those sigs really were solid. 7AJ had to attend W.I.A. Council Meeting that night, so 7DH had band to himself. Ten VKs were worked between 2000 and 2315. 7CW came on for whilt, but was confied to c.w. as he had trouble with modulator. Bad luck, Cros. 7AJ reports opening to VK2-4 on 17th and 18th. Band went flat until 27th when 7AJ heard and worked ZL1, 2, 4.

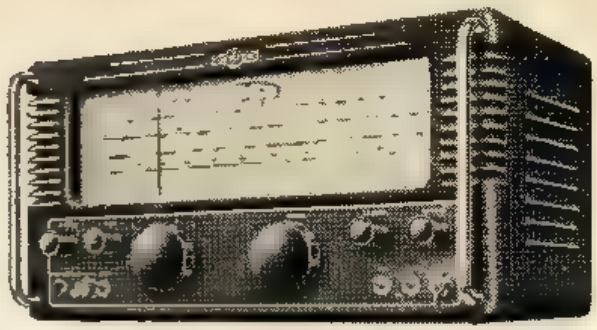
On 29th, 7AJ was fortunate in hearing what he considers to be the best VK7-ZL opening in last two years. This occurred at 1700 hours to ZL1, 2, 4. Altogether Athol worked 14 ZL stations

(Continued on Page 18)

Heralding

THE GREATEST AMATEUR COMMUNICATIONS RECEIVER OF ALL TIME . . . the

EDDYSTONE "750"



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BELLING LEE

This is one of the famous old British names in radio and one that you have seen frequently advertised in English journals and therefore requires no introduction from us.

It is our policy to bring to the amateur and professional radio field in Australia only quality products in which an investment means a financial saving and an insurance of faithful and efficient performance. For this reason we are proud to mention a few of the good things made by Belling & Lee Ltd. They are obtainable from all good Eddystone distributors throughout Australia.

AERIALS.—The SKYROD anti-interference aerial is 18 feet in length, made in five sections and is complete with fittings for lashing to a chimney or to a mast head. Erected on a chimney or mast, this aerial is well free of man-made interference and vastly improves the signal-to-noise ratio.

"ELIMINOISE" is the name given by Belling Lee to a system of extremely efficient transformers and feeder cables for the eradication of noise. A complete kit is available for use with horizontal dipoles or the SKYROD vertical aerial. The kit consists of the aerial transformer L306, which is mounted right at the aerial feed point. This unit possesses a balanced RF transformer complete with Faraday screen between windings for the reduction of capacitive pick-up. The receiver "ELIMINOISE" (L307), which is mounted right at the receiver input terminals, is a similarly made RF transformer and is balanced to respond evenly over the 10-50 metre and the 200-2000 metre bands.

L1221 feeder is a 60 to 75 ohm balanced twin shielded RF cable used in conjunction with L306 and L307 above. No pick-up of noise can occur between the aerial and the receiver with this polythene insulated and screened with copper mesh type of cable.

The Belling & Lee aerial systems are available as either complete kits or may be purchased as components as desired. Noise reduction of 10 db or better is possible with the "ELIMINOISE" system and the automatic balancing of impedances adds further gain to any communication receiver.

—R. H. CUNNINGHAM AND COMPANY, MELBOURNE.

FIFTY Mc. AND ABOVE

(Continued from Page 10)

that afternoon. Following two days, again opened to ZL at 1600 and 1625, while on 2/1/50 opened to VK4 at 1600 hours.

144 Mc. DOINGS OF THE MONTH

N.S.W.—The band has steadily received more xtal control stations and now-days the mod.-osc. are fewer. Although quiet, because of the contest, some Interstate skeds during January are being run by 2AH and 2NW-3OD at 2000 hours. Three minute transmissions and three minute listening. 2AH with the valuable assistance of 2MQ, 2HO, and 2BG erected a 32 array, 40 ft. in height, and has hopes!!

Victoria.—During the field day held on the 11th of December some very interesting results were achieved by stations operating on this band. The portables out were 3AKE and 3VF, 12 miles S.W of Geelong, operating from a point 700 ft. a.s.l., 3ANW at Mt Donnabuang, 3LS near Mt. Bogong, and 3TO near Yalbourn. The most interesting contact recorded was between 3LS and 3AKE, a distance of approx. 190 miles with S7 8 signals both ways. This is definitely a record as far as VK3 is concerned, and quite possibly one for all Australia. 3LS also worked 3ANW, 120 miles, and 3APF, about the same distance. Other good contacts were 3TO to 3AKE, 120 miles, and to 3RK and 3ABA in Melbourne about 80 miles.

Conditions on the band otherwise continue much the same, with 3ACH, 3ARL, and 3AAF new stations in the Melbourne area. Geelong signals continue to be very good, on many nights being well above their usual level however no more distant contacts have been made yet.

With a view to eventually breaking through to VK2, a nightly sked has been arranged VK3s call VK2 from 2000 to 2003, then VK2s call VK3 from 2003 to 2006, VK3s call again from 2006 to 2009, and the VK2s again from 2009 to 2012. VK2BZ operates on 144.156, 2AH on 145, 2HO, 2ADT, 2ADS, and 2ARG, whose frequencies are not known at present, will all be on the look out as well as others.

On the 27th, 3ABA operated portable from the location of 3DG in Lancefield, 40 miles N.N.W of Melbourne. 3IM 3RK, and 3NW were contacted, so when 3DG gets on the band he will provide an interesting QSO for Melbourne stations.

Tasmania.—7MO reports hearing VK3AKA who reports that he does not possess a 144 Mc. transmitter. Possibly it was VK3AKE. No further information on this. Stations now operating on 144 Mc are 7BQ, 7MO 7DB 7PF—all xtal controlled 7BQ runs 829 final, 7MO using 1143 rig 7DB 6G6 osc., 6V6 trip, EF50 amp, RK34 tripler driving 815 7PF has EF50 osc. trip, 6V6 doubler, 832 tripler with 815 in final.

288 MEGACYCLES

Victoria.—Interest in this band is now growing and at last some two-way contacts have taken place. 3NW having worked 3XA, and 3LS 3ED. Others with gear for the band are 3MD, 3RK, 3EO, and 3IM. The most popular transmitter seems to be a pair of 7193s with plate and cathode lines, while the receivers are super-regens using 955s or similar tubes. Aerials include a co-ax dipole at 3NW, eight element broadside arrays at 3LS and 3ED, and a dipole and plane reflector at 3IM.

576 MEGACYCLES

New South Wales.—Some future work between Gosford and Sydney (50-60 miles) is contemplated over territory not "line of sight." 2RU at Gosford with gear by 2ND, 2XX and 2YR and others hopes to contact 2XX at Sutherland.

Victoria.—Most important piece of news this month is the establishment of a new record on 11th December when 3AKE portable S.W. of Geelong worked 3ANW at Mt. Donnabuang, the distance being approx. 90 miles. Signals were S8 both ways. 3ANW also worked 3XA and 3DA in Melbourne, about 30 miles.

3XA continues his contacts with 3RR at McCrae and the difference in signal strengths from day to day is really surprising, being anything between S4 and S9 plus. 3RR is still unable to contact 3NW, despite an increase in Ken's antenna height, although they can work with S8/9 signals from a hill a short distance from 3NW's location. It is evident that signals do not bend over hills nearly as much as on the lower frequencies, although it must be remembered that the power outputs on this band are very low, and it might be a different story with 10 or 15 watts out.

2,300 MEGACYCLES

Victoria.—A sudden increase in interest has been shown in this band and a two-way contact over a short distance has been made between 3ANW and 3AKZ portable. Gear used in both cases were co-axial line oscillators using 2C40s, and crystal detectors followed by audio stages. The oscillators are now being tested as separately quenched super regens. 3XA, 3QO, and 3RR also have co-axial line oscillators built using 446Bs, so it is hoped a number of contacts will be made before long.

Abstracts from Overseas Magazines

Since these abstracts started we have not had many comments on their usefulness or otherwise. These comments we have had, have been mainly agin' the idea. If this is general opinion, then out they go, since space in "A.R." is always short. We welcome your opinion for or against (and on any other ideas about the magazine you may have).

"RADIO AND TELEVISION NEWS," OCT., 1949—

P. 39: "A Novel Tubeless Tone Generator;" R. P. Turner, K6AI.—Uses crystal rectifiers to produce the 4th harmonic of the a.c. mains frequency.

P. 42: "The Beginning Amateur, Part 9;" E. Hartzberg, W2DJJ.—General discussion on phone operating.

P. 44: "Fringe Area Television Reception;" R. W. Sanders.—Contains interesting data on antennae and low noise pre-amplifiers.

P. 47. "Tune Your Antenna With a String;" H. A. Ulyat, W4JPW.—With pullies, strings and weights, the length of the antenna and feed lines (of twin lead) can be changed to resonate in different bands.

P. 49: "A Signal Tracer at Minimum Cost;" D. G. Ward.

P. 52. "A Wide Range Equalising Amplifier;" H. R. Hyder.

P. 54: "A Low Cost Ham Receiver;" N. G. Noell, W5OFW.—6AO7 mixer, 6C5 local oscillator, plug-in coils, 1600 Kc. regenerative i.f., etc.

P. 57: "Self Supporting Towers for T.V. Antenna Arrays;" L. E. Greenlee.—How to make a tower which will stay up.

P. 58: "Modern Television Receivers, Part 19;" M. S. River.—Horizontal sweep circuits of typical American commercial receivers.

P. 61: Rhombic Antennas for Television," W. Smith.—Design of v.h.f. rhombics. Good gen.

P. 70: "A Three Pound 10 Metre Beam;" E. F. Harris, W9EKE.—Constructional details of two element beam, using 0.12 wavelength spacing with 6.7 db gain and 15 db front-to-back. Stress calculations show it will stand a 75 m.p.h. breeze.

P. 74 "A Special Wide-Band Scope Amplifier;" M. Kaufman.—6SN7, 6V6, 6V6 amplifier. Sensitivity 0.07 volts per inch (for 5BP1 c.r.t.). Flat for 0 cycles to 1 Mc.

"QST," OCTOBER, 1949—

P. 11: "A Cascode Converter for 144 Mc.;" H. H. Cross, W100P.—6AK5 triode connected, plus half 12AT7 as cascade r.f. amplifier, 6AK5 mixer, half 12AT7 oscillator.

P. 14: "Two-Band Antenna Matching Networks;" J. G. Marshall, W0ARL.—How they work and how to design them.

P. 19 "A Built-in 10 Meter Mobile;" H. J. Hanson, W7MRX

P. 22. "Painless Prediction of Two Metre Band Openings," W. F. Holsington, W2BAV.—All 2 metre DX men should read this. The idea is that 2 metre DX can be worked along lines of equal barometric pressure. The weather maps over the area where it was known DX was open are shown to illustrate what to look for.

P. 29 "A Crystal Controlled Plug-in Converter for the Q5er;" J. L. Stewart, W6UJD.—Uses a crystal controlled converter with the BC453 as a variable i.f. for 40 and 80 metres.

P. 38: "Your Beam—Will it Stay Up?" R. W. Woodward, W1VW.—Where different metals touch there will be continuous corrosion, especially in humid or seaside atmosphere.

P. 40. "The Hum Bug;" A. F. Scotten, W8ZMZ.—Don't look now, but I think someone is gently pulling my leg. But I'm only an inquisitive phone man.

P. 42 "Tailoring the Series Tuned V.F.O. to Your [redacted];" G. L. Countryman, W8HH

P. 46: "Technical Topics—Stop and Go Circuits." Combination of series and parallel tuned circuits for r.f. and audio purposes.

P. 55: "T.V.I. Tips;" G. Grammer.

P. 56: "Hints and Kinks."—(i) modulating the test oscillator (ii) Hand driven generator hints. (iii) Filter and control circuit for the PE103 (iv) Miniature 10 metre exciter. (v) Simple inverse feed back circuit. (vi) Curing chirp in Command Transmitters. (vii) Low drift condensers from the BC375E. (viii) An improved twin lamp.

"CQ" NOVEMBER, 1949—

P. 13: "Modulating a Kilowatt;" R. C. Check, W3LOE.—Push-pull class AB1 304TLs.

P. 16: "Wide Range V.H.F. Converter;" C. O. Bishop, W5HEA.—Uses the "Mallory Inductuner" with 6J6 grounded grid r.f. stage and 6J6 mixer-oscillator. Continuous coverage from 49 to 234 Mc

P. 18: "Command Set Special;" F. A. Bartlett, W6GWP.—Uses command transmitter and receiver as 80 or 40 metre mobile rig.

P. 22: "More on V.H.F. Converters;" J. E. Stacy, W1KIM.—Good oil for v.h.f. men. Compares the relative performances of various tubes and ranks r.f. stages in the following order of merit, cascade, grounded grid, push-pull, cathode coupled, and conventional pentode circuits a poor fifth.

P. 23 "T.V.I.-Free Rig for 10;" M. Seybold, W2RYI

P. 27 "The R-5 Mike;" W. S. Rogers, W1DFS.

P. 29: "A Man Size All-Band Exciter;" D. Good, W6EZP.—Collins v.f.o., 6AG7 buffer, four 6L6 doublers, 4E27 final amplifier. Everything band-switched and gang-tuned.

"QST," NOVEMBER, 1949—

P. 11: "The Selectojet;" O. G. Villard, W6QYT, and D. E. Weaver, W6VQL.—A variable frequency selective audio amplifier, oscillator and rejector filter.

P. 18: "Break-in with One Antenna;" M. E. Hiehle, W2SO.—Uses same principles as the radar "T-R duplexer" except relays are used to open and short the stubs instead of gas tubes. This one handles a kilowatt on several bands.

P. 21. "Harmonic Reduction in a 500 Watt All-Band Rig;" D. H. Mix, W1TS.

P. 29: "The Regenerative Wavemeter;" G. Grammer, W1DF.—Similar to a grid dip oscillator except the feed-back can be varied. With this adjusted to the verge of oscillation, a very sensitive absorption wavemeter results.

P. 32: "The City Slicker Array for 144 Mc.;" F. S. Harris.—Gain without directivity.

P 35. "The Story of FPBAA;" J. H. Du Bois, W3BXE.

P. 40: "A 75 and 20 Metre Single Sideband Exciter;" S. Goodman, W1DX.—Uses commercial phase shift networks.

P. 46: "Two Band Antenna-Matching Networks;" Part II.; J. G. Marshall, W0ARL.—Continuation of October, 1949, article.

1950 R.E.F. CONTEST

To celebrate the 25th anniversary of the foundation of the R.E.F. and the I.A.R.U. at Paris in 1925, the contest known as the "Coupe du R.E.F." contested annually with the participation of the Belgian, Luxembourg, and Swiss Hams will be extended this year with the collaboration of all the Amateurs of the whole world.

EXTRACTS OF THE RULES

Dates.—C.W.: Saturday, 25th February, 1200 GMT to Sunday, 26th February, at 2400 GMT.

Phone: Saturday, 4th March, 1200 GMT, to Sunday, 5th March, at 2400 GMT.

To assist the DX working, internal contacts in Europe are asked to cease between 2200 GMT and 0600 GMT.

Foreign stations are to call French, French colonial, Belgian, Belgian Congo, Luxembourg, and Swiss stations in the form "CQ REF" or the general call "REF de . . "

French stations in France belonging to different administrative districts will be distinguished by a numeral (e.g. F8PK/14) or in Algeria by two letters (e.g. FA8IH/AL) or by a different prefix (e.g. FE8AB, FM8AD, CN8AQ, etc.).

Swiss stations belonging to different Cantons will be distinguished by two letters (e.g. HB9GR/GE).

Points.—Three points will be scored for a complete contact.

Scoring.—The total points scored for complete contacts on all bands, multiplied by the total R.E.F. Sections, Swiss Cantons, and different Contest Countries of the R.E.F. worked on each band.

Awards.—A Souvenir Certificate will be presented to the first two stations in each country and each call district of W, VE, and VK, providing a log of all work is sent to the R.E.F.

Logs.—A log will be entered for c.w. and another for phone. Each log entered will show the call sign, name, address, of the station, the final tube and input, type of antenna, and then in columns, the band worked, the date time GMT, call of station worked, section canton or country worked, number sent, number received, and number of points.

A summary giving, by bands, the number of QSOs, the number of sections, cantons or countries worked, then the number of points, the totals and the final score.

The log will show a signed statement that the Rules and Regulations have been observed and will be sent and addressed to "Coupe du R.E.F.," 72 rue Marceau, Montreuil, S. S Bois, (Seine)

Note.—The serial sent and received will probably be as for A.R.R.L. Contest, although it has not been mentioned here.—Federal Secretary.)

FEDERAL, QSL, and DIVISIONAL NOTES

Federal President: W. R. Gronow, VK3WG; Federal Secretary: W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary—Geo. Cameron (VK2GC), Box 1734, G.P.O., Sydney

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney

Divisional Sub-Editor.—L. D. Cuffe, VK2AM, 14b Watson Street, Neutral Bay, N.S.W.

Zone Correspondents.—**North Coast and Tablelands:** P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; **Newcastle:** H. Whyte, VK2AHA, Vale St., Birmingham Gard., Newcastle, Coalfields; **and Lakes:** H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; **Western:** G. J. Russell, VK2QA, 116 Bogan St., Nyngan, **South Coast and Southern:** R. H. Rayner, VK2DO, 42 Pettit St., Yass, **Western Suburbs:** A. C. Pearce, VK2AHB, 48 Harrabrook Ave., Five Docks, **Eastern Suburbs** H. Kerr, VK2AX, No. 4 Flat, 144 Hewlett St., Bronte, **North Sydney:** L. D. Cuffe, VK2AM, 779 Military Rd., Mosman, **St. George:** J. A. Ackerman, VK2ALG, 33 Park Rd., Carlton; **South Sydney:** V. H. Wilson, VK2VW, Cr. Wilson St. and Marine Pde., Maroubra.

VICTORIA

Secretary.—C. C. Quin, VK3WQ.

Administrative Secretary.—Mrs. O. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.1.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—**North Western:** R. E. Trebilcock, VK3TL, 122 Victoria St., Kerang; **Western:** C. C. Waring, VK3YW, 12 Skene St., Stawell; **South Western:** W. H. Ross, VK3UT, Ballangeich, via Warrnambool, **North Eastern:** J. A. Miller, VK3ABG, "Erinvale," Avenel, **Far North-Western Zone:** Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; **Eastern Zone:** Mrs. P. M. Churchward, VK3UB, "Shirley," Red Hill.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7196 Kc. and 2000 hours EST, 50.4 Mc. No frequency checks available from VK2WI. Intra-State working frequency, 7175 Kc.

VK3WI.—Sundays, 1130 hours EST, simultaneously on 3580 and 7196 Kc. and re-broadcast on 50 and 144 Mc. bands. Intra-State working frequency 7185 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours E.S.T. simultaneously on 3750 Kc., 7196 Kc., 14342 Kc., 52.4 Mc. and 144.128 Mc. Frequency checks are given two nights weekly, and the times are announced during Sunday broadcasts. 7065 Kc. channel is used from 1000 to 1030 hours each Sunday as VK4 query service to VK4WI.

VK5WI.—Sundays, 1000 hours SAST, on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Saturdays 1400 hours, Sundays 0930 hours WAST, on 7196 Kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1000 hours E.S.T. on 7196 Kc. No frequency checks are available.

QUEENSLAND

Secretary.—W. L. Stevens, VK4TS, Box 635J, G.P.O., Brisbane.

Meeting Night.—Last Friday in each month at the Y.M.C.A. Rooms, Edward Street, Brisbane.

Divisional Sub-Editor.—F. H. Shannon, VK4SN, Minden, via Rosewood.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1114K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Place.—Padbury House, Cnr. St. George's Ter. and King St., Perth.

Meeting Night.—Watch the Monthly Bulletin.

Divisional Sub-Editor.—George W. Ashley, VK6GA, 38 Mars Street, Carlisle, Western Australia.

TASMANIA

Secretary.—R. D. O'May, VK7OM, Box 871B, G.P.O., Hobart.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—Capt. E. J. Cruise, VK7EJ, Anglesea Barracks, Hobart.

Northern Correspondent: C. P. Wright, VK7LE, 3 Knight St., Launceston.

FEDERAL

DX C.C. LISTING

PHONE			
VK3JD	(1)	37	138
VK6RU	(2)	37	130
VK6KW	(4)	37	129
VK3BZ	(8)	36	126
VK4JP	(8)		114
VK6DD	(5)		113
VK3EE	(10)		113
VK3LN	(11)		102
VK3IG	(5)		100
VK3JE	(7)		100
VK4ES	(9)		100
C.W			
VK3BZ	(8)	40	163
VK3CN	(1)	40	144
VK3VW	(4)	39	135
VK4EL	(9)	39	135
VK2QL	(5)	40	133
VK3KB	(10)	39	129
VK4HR	(8)	40	125
VK3EK	(3)	39	122
VK4RF	(11)	35	119
VK2EO	(2)	40	116
VK3FH	(16)	37	115
VK4DA	(7)	38	113
New Members—			
VK4DO	(20)		101
VK3JE	(21)	39	108
OPEN			
VK3BZ	(4)	40	185
VK6RU	(8)	37	163
VK2DI	(2)	40	160
VK3HG	(3)	40	155
VK3JE	(12)	39	154
VK4HR	(7)	40	151
VK6KD	(13)	39	149
VK3MO	(5)	39	139
VK3QP	(19)	39	137
VK3KX	(1)	40	136
VK4EL	(10)	39	135
VK2ADE	(28)	40	133
New Member—			
VK7KB	(30)		103

COUNTRIES LIST

There has been a mix-up in the status of contacts with Newfoundland and Labrador for which we must apologise. The true story is now that any contacts taking place before the 31st March, 1949, will be counted as an extra country for those who have the necessary card. Credit for Newfoundland has been given to those members of the DX C.C. who previously had it deducted, and the totals in the Listing have been amended accordingly. Those members of DX C.C. who have not previously been credited with it should send in the card with their next batch.

Add to January "Countries List"—Newfoundland and Labrador (2, 5) (contacts before 31st March, 1949), VO.

19th FEDERAL CONVENTION ITEMS

Elsewhere in this issue will be found item action taken by Federal Executive on motions passed at the 19th Convention. This is published for your (yes, YOUR) information, so please spend a few minutes and read it. By so doing you will see something of the work of your representatives. It is hoped also that it will be used by Divisional Councils to "cull out" the "hardy annuals."

REMEMBRANCE DAY RESULTS

As some adverse comment has been made on a paragraph in the official results regarding multiplier, it is desired to apologise for this comment (which is not the official one) but was the personal opinion of the scribe.

FRENCH ANTARCTIC EXPEDITION

After their unsuccessful attempt to reach Adelie Land last year, the French Antarctic Expedition is again on the way—with more success this time we hope; for on board this time is CN8AO who will be the operator of FB8AX, the official amateur call. Look for them on 10 and 20 metre phone and c.w.

W.I.A. ACTIVITIES CALENDAR

Feb. 7: Appointment of Federal Councillors.

Feb. 19: 20th Convention items due at F.E.

Feb. 28: Convention Per-Capita due with F.E. End of fiscal year of Divisions.

Mar. 10: Agenda for 20th Convention issued.

Mar. 17: Annual Per-Capita from Divisions due with F.E. not later than this date.

Mar. 31: End of fiscal year for F.E.

Apr. 7, 8, 10: 20th Annual Federal Convention in Melbourne.

FREQUENCY ALLOCATIONS

The following is a list of the bands available for use by the Amateur Service in Australia, followed by the types of emission allowed on these bands.

3.5	to	3.8	Mc.—A1, 2, 3a, 6F3
7.0	to	7.1	Mc.—A1, 2, 3a, 6F3.
14.0	to	14.4	Mc.—A1, 2, 3a, 6F3
28.96	to	29.28	Mc.—A1, 2, FM.
28.0	to	30.0	Mc.—A1, 2, 3a, 6F3
50.0	to	54.0	Mc.—A1, 2, 3, FM.
144	to	148	Mc.—A0, 1, 2, 3, FM, Pulse.
288	to	296	Mc.—A0, 1, 2, 3, FM, Pulse.
576	to	588	Mc.—A0, 1, 2, 3, FM, Pulse.
1215	to	1300	Mc.—A0, 1, 2, 3, FM, Pulse.
2300	to	2450	Mc.—A0, 1, 2, 3, FM, Pulse.
5650	to	5850	Mc.—A0, 1, 2, 3, FM, Pulse.
10000	to	10500	Mc.—A0, 1, 2, 3, FM, Pulse.
21000	to	22000	Mc.—A0, 1, 2, 3, FM, Pulse.
30000	Mc. and higher—A0, 1, 2, 3, FM, Pulse.		

Note.—6F3 emission represents a maximum deviation from the quiescent frequency of plus or minus 3 Kc.

RECORDING AND RE-TRANSMISSION OF AMATEUR TRANSMISSIONS

As a result of representations made to the Dept. on Agenda item 23 of the 19th Convention, the publication of the rules governing the issue of these permits is given below.

"The Department, as you know, is totally opposed to transmission of recordings from Amateur Stations but realises that, in certain cases, re-transmission of Amateur signals may produce beneficial results . . . it was intended that such recordings should be made only in cases where evident faults in transmission justified such action . . . It is proposed to re-allocate permits each September or as a vacancy exists.

"Conditions governing the issue of such permits require, before an application may be considered, that the licencee concerned must satisfy the Department that,—

(a) he has equipment capable of producing recordings of good quality,

(b) he has had adequate experience in sound recording,

(c) he is actuated solely by a desire to improve conditions on the Amateur frequency bands (permits are not issued to enable licencees to extend their knowledge of the subject),

(d) transmissions will be recorded and played back only at the request of the Amateur licencee concerned; and
(e) no use will be made of the recordings other than as stated in (d) above.

"Applications from members of the Wireless Institute should, in the first instance, have the concurrence of the State Division concerned and all such applications should be submitted to the Superintendent (Wireless) in that State for his investigation and recommendation."

The above gives the important portions of the requirements, and the present holders of such permits in each State is listed.—

N.S.W.—No permits have been issued.
Victoria—VK3HF H. Fuller, VK3DH, I. Morgan; VK3BU, W. Brownbill; and VK3VM, E. Marks.
Queensland—No permits have been issued
South Aus.—VK5GL, C. Tilbrook; and VK5LK, F. Holsten.
Western Aus.—VK6HW, R. Hugo, and VK6JS, J. Squires.
Tasmania—No applications have been received.

This service is for you, so make use of it.

— . . . —

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Cards to hand from VS1GW (VK5SO) of No. 2 Servants' Mess, R.A.F., Seletar, Singapore, quotes the present QTH of the owner as 53 South Terrace, Plympton Park, Adelaide, South Australia, and requests QSLs be sent via W.I.A. Does that indicate that Syd is returning to the Adelaide QTH shortly?

Noel Roberts, ex-VK6NR, ex-VK6NR, ex-VK3NR, can be currently reached at the following QTH:- c/o. ZL3MH, Foreman Technician, Harewood Airport, Christchurch, New Zealand. Noel expects to assume a ZM6 call in the early part of 1950.

The following information on MP4BAD comes from VK3QP. MP4BAD, in Trucial, Oman, expects to leave for his home QTH in England by Xmas, 1949, and requests that all QSLs be sent either via R.S.G.B. or to 6 Alder Lane, Hollins, Oldham, Lones., England. He also suggests that all QSLs for MP4 be routed via R.S.G.B. as they go astray if sent direct to Trucial, Oman. He requests this treatment also for cards for MP4BAB, BAC, BAE, BAJ. He mentions that there is also a station in the Sheikdom of Qatar with call sign of MP4BAM, but he is active infrequently.

The QTH of MD2PJ in Tripoli is Box 60, Tripoli, North Africa. MP2PJ states he has sent QSLs via surface mail to VKs 2NS, DG, FX, TF, DI, ED, EO; 4IO, 5KU. Cards can be either routed direct or via R.S.G.B.

Full and final details of the South African International DX Contest, which was held in January, 1950, did not arrive in time for publication in the December issue of "Amateur Radio." This Contest has been established as an annual event. Logs must contain the following information. Date, time, band, call sign, serial sent and received, points claimed multiplier and number of countries worked. Logs should reach the S.A.R.L. Contest Committee at 47 Flower St., Pretoria, South Africa, by 5 th April, 1950, and must be accompanied by the usual declaration. Certificates will be sent to the winners of this contest in each country.

While on the subject of DX Contests, the writer entirely agrees with the views expressed by Bill Moore, VK2HZ, writing in a recent issue of R. & H. Bill pointed out that the growth in the number of these contests is such that there is now scarcely a free week-end in which the more popular DX bands can be used without being entangled in some International DX Contest with the resultant QRM and the subsequent time spent in compiling voluminous logs. This is a matter which might well be the subject of consideration by the I.A.R.U., as while three or four contests a year meet with the approval of everyone, the multiplicity of contests now staged annually as International events means a falling off in interest in the old established Contests.

Stations contemplating the erection of a G8PO reversible fixed or rotary beam should profit by the experience of the writer as regards the placement of the array. Two fixed 14 Mc. arrays were erected at right angles to each other and so placed that their firing directions gave global coverage. This worked out in practice equally as well as it did in theory, but an aspect that was overlooked was that the spreader of one of the arrays fascinated the bird population around the neighbourhood. During the daylight hours these feathered friends disported and preened themselves on the spreader and expressed their appreciation by caroling and chirruping to some order. This gave the writer a feeling of well being which, however, was short-lived as on returning home from work one fine Monday afternoon with pleasant thoughts of a couple of hours of DX before dinner, he was met by an irate XYL who led him backyardwards to the rotary clothes line situate directly underneath the spreader. So accurate had been the aim of our feathered friends that the contemplated two hours of DX resolved itself into two hours in the laundry re-washing the objects of our friends' marksmanship.

The QSL Manager will be absent on holiday during January. The Otway district will claim half of the holiday period while the other half will be spent as in previous years, in pursuit of the elusive but valuable yellow metal. Some delay to QSL traffic and correspondence is inevitable during this period.

A much travelled card has recently reached its correct destination after journeying approximately 25,000 miles. W3AOS, of Philadelphia, sent his card direct to VK5BO as an open postcard and addressed correctly except for the omission of the name of the State. After travelling around various States of Australia, it was endorsed try Ottawa, Canada, but of course not being known in Canada, it was eventually returned to the sender, who enclosed it in an envelope and sent it to the Federal QSL Bureau, for onforwarding.

Congratulations to Johnny Jones, JA5AJ, ex-VK3RG on his promotion to Squadron Leader. Johnny is presently signals officer for 77 Squadron R.A.A.F., B.C.O.F., Iwakuni, Japan, and should reach his home location by Easter 1950 after a 15 months' sojourn in Japan.

A few cards addressed to PK6XA and returned by the N.V.I.R. bear the stark endorsement—"PK6XA was murdered in Indonesia."

Stations awaiting a card from AC4NC should take fresh hope from the knowledge that a QSL is certain in due course. Chak advises under recent date that two printings of his cards have run out and he awaits a further printing and assures all concerned that a card will be sent to all contacts.

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NEW SOUTH WALES

NORTH SHORE ZONE

Apart from the lure of the beaches, conditions on the DX bands have been so poor that most of the gang except the diehards have been conspicuous by their absence. However, 2PV, 2AMB, 2PX and others have been rewarded by some very choice stuff whenever the band has opened up for a short break. 2PV has snagged OQ5, FE8, and FF8 in the early mornings, as a sample.

2TL has decided to give away 813s, finding them too temperamental, and is re-building the final using an 811. 2AND has at last given up after his 143rd push-pull 807 design, and is now using an 811 rig on c.w. and phone. 2GC still hammering away on 40 and cleaning up the shack for the 47th time—he doesn't have any more success than the rest of us! 2GQ busy counting up votes for the Senate, and reckons that after that, Contest scores are purely mental arithmetic. 2AMV is a new one on from Mosman with a nice solid signal. 2XM away at sea again, and can be heard quite often from the direction of New Zealand. 2NI has got ten metre elements on his beam, after all, snuggling down close to the twenty metre array. 2ZH, the old maestro, heard raising the fanciest of DX to his CQs from his new location—he must give away a handfull of opals to each new country worked, judging by the way they go back to him. 2AII heard on the air again after a long absence. 2JG seems to have retired from the game altogether—believed to be taking an intense interest in audio amplifiers. 2AQN hasn't been heard for a while.

2AOW appears to be maintaining his beam service to England, in spite of the present woeful conditions. 1EO is rumoured to be getting in lots of early nights in preparation for the forthcoming R.S.G.B. Contest. 2QL is back from VK9, but tells me he has been posted to Townsville, so will be on there with a VK4 call for about two years. 1RA has been heard occasionally after rare ones in the early mornings. To all the gang on the North Shore, belated, but none-the-less sincere, good wishes and DX for the New Year.

EASTERN SUBURBS ZONE

2HP has made a comeback on 20 metre phone with a brand new rig plus v.f.o. Hopes to get among the DX again. Harold is a dinkum old-timer and past president of the Institute in N.S.W. 2TN has been active on 20 and 40 metre phone, using new crystal mike with good results. Tried some portable work whilst on vacation in VH3. 2AJC doing extra well on low power on 20 and 40 phone and c.w. He is getting his share of the DX. 2CF has been more active lately on 20 and 40 metre phone. 2FJ is back again after re-building his final and is putting out a better signal than ever. He is anxiously canvassing estate agents for a high located piece of ground on which he hopes to build, retire and erect that super sixty foot tower.

2YF has been on holidays and as is usual with the fraternity, that means that he has found time to construct and erect a G8PO beam and hook it on his 40 foot tower. It is paying dividends and Frank is now working more DX than ever. 2KT, due to a change of jobs, Les has not been active of late, but will be consistently heard on 20 metre phone when his new mast project is completed. 2AIG still toying with his pet subject—electronic keying systems—but managed to tear himself away from it long enough to re-build his final with the resultant improved output and quality. Aims to experiment with suppressor grid modulation.

2CE has been occupied building portable gear and has been heard testing same, running about 2 watts on 40 metre phone. He aims to achieve the ultimate in results from battery and genemotor operation. The receiver in use with the portable rig is a 2/3 tube super with a sensitivity that has to be seen to be believed—but this is just what we have come to expect from Alf. 2QO heard mostly on 20 metre c.w. Phone operation invites h.c.i. troubles. Anybody got a house in a good location that happens to need a tenant? 2BF, the Waverley Radio Club, a fairly ancient institution in this area, has a new 20 metre phone transmitter but lack of licensed operators is curtailing operations as the station is rarely heard. 2DV only seems to bob up for a brief time during festive seasons.

2KO is still bowling over the DX. Heard him about 5 a.m. one morning working Italians, French, German and North Africans after he had finished his regular chat with a string of Gs. When Don knocked off for a cup of tea he was still in great demand from Portugal and Italy. Unfortunately, like others, he just has to work for a living so it was a case of "big switch." 2AX is considering another re-conversion of the AT5, using 50 watt pentodes in the final and suppressor grid modulation. Activities have been curtailed lately but always seems to make the grade for the usual 40 metre phone fraternals on Sunday mornings.

2AHQ would do better if he would transmit his seasonal greetings over the air instead of sending cards. Hasn't been heard from for months. We know Hams with more than three harmonics who still get on the air, even if there is a prominent background. How about it, Ted? 2AFZ seems to have disappeared lately, same applies to 2AHJ. 2AZH active on 20 metre phone with excellent results from grid modulation to an 813.

NORTH COAST ZONE

It was a happy Xmas this year, everyone seemed to be enjoying themselves and quite a number of portables were active. It was very pleasing to hear the gang exchanging greetings in the true Ham spirit. Conditions on the North Coast have been marred by heavy QRN, storms nearly every afternoon and night. 2AJE is on again, now off the relieving staff and should be heard often. 2JK off until he completes the emergency gear, won't be long now. In his spare time Jack has been practicing trading for rabbits, getting ready for his challenge issued to 2KR and to be held at the next Urunga Convention. 2OE, 2SR, 2GI, 2WQ, 2TB, 2EA, 2NY, the Clarence gang all active over Xmas. The Richmond River gang conspicuous by their absence. What's wrong up there Doc?

2RK been on since his return from holidays with nice QRP signal. 2ARY, 2AAP, spending few weeks in Sydney and will be looking over the junk. Harry hopes to bring back a tape recorder for the Urunga do. 2XO lost all his antennae in a 100 m.p.h. blow. 2ASF and 2ZS active on 40 and had visits from the "Coon" of Coonamble. 2AOU and a few 807s lost their emission at the local during his stay. 2SH heard on 40 announcing he had caught a bag of bream. Doug always comes on 40 and tells of the "whoppers" but hasn't been on 40 for three months so the fish must have been off at Port Macquarie. 2PA chasing DX on 28 Mc. and getting amongst it. 2AWS just erected a new antenna with improved results. Emergency network forms have been sent out to the gang, but so far the needed information has not been returned to 2PA. Please give it your attention so the net can get off to a good start early in the new year.

A big programme and plenty of entertainment has been prepared for the 2nd W.I.A. North Coast Convention to be held during Easter week-end, 8th, 9th and 10th April. Come along with the YF and harmonica and join in the fun. There will be a surf carnival, motor bike races, dances, fireworks display, picture shows. For the Hams a lecture, competitions, 144 Mc. hunt, plenty of prizes. A highlight will be the yabby catching contest. 2JK's challenge to 2KR carries a side wager of £5. We were sorry to hear that 2KR fell down a grease trap during the Xmas festivities ruining his best suit in the process. 2XO has the Urunga Hotel booked out for the Easter Convention, so please let him know as soon as possible if you require accommodation. Hotel expenses 18/- per day. If you like to camp, bring a couple of rugs and stop with the boys, you can eat out in Urunga. A number of Interstate visitors are expected from VK4. Get your portable gear ready and join in the fun. Incidentally, the night after 2KR was in combat with the trap, somebody was heard on 40 calling "Willie Pong." Cheers and wishes for 1950 from the North Coast gang.

HUNTER BRANCH

Poor conditions plus the frivolities of the festive season probably accounted for the reduced activity of the month. 10 metre "reliables" 2FP and 2AFS

still working choice DX—new countries scarce though. Believe Bob just has his noise in front, he must have read last month's notes. All members wish to congratulate 2KB on his success in the last Federal Elections and hope you can still find time for a little Ham Radio Allen. 2AMM has at last finished the new shack and working 20 DX with fixed beam. 2PT on 20 occasionally. Bill 2CW was unfortunate to be taken to hospital recently, but got home for Xmas and is OK now. Had the pleasure of seeing the new rig at 2XT's, about five stages ending up in a 813, very fine job too.

2FX inactive but thinking of going underground with rig, no room in garage—that car must be very big Frank. He is now at b.c. station with 2ZC, 2AHA and 2KG. 2ANA back on 40 again with that nice signal 2LV has the best phone we have heard from him yet on 40. 2UY has the big Rx going, can throw away the 0-V-1. 2CS putting 80 signals into radiograms now, but works a few Qs on 10. Congrats to Bert Watts who received his call at last—2CN. 2AGV not very active but enjoyed his first field day at Woy Woy. Fred does not get many Sundays off. 2PQ still very strong in Europe on 10. 2TE concentrating on 10 and 20 DX. 2ON incidentally active on 40, but could do with a bit more modulation. CW merchant 2XY still working 20 and 40 with fine signal. 2NX still crazy on flying, the c.w. practice receiving little attention. Congrats to 2OS and 2ADS for working VK6 and ZLs on 50 Mc. 2UF putting nice signal across to VK5 but can't hear them. 2BZ looking for real DX on 50 Mc. and looking cross-band to 144 Mc. a lot. 2ANU of Muswellbrook on 50 Mc. with 4 watts, working through to Sydney—a fine effort. 2KQ very pleased with new beam on 50 Mc., 42 feet high, hears Sydney well now. 2ANL also on 6 with strong signal. The Rx at 2KG is looking nice now, glad the jnr. op. OK. 2AGU been batching while XYL in hospital, hope all the worries are over now George; has new freq. meter-phone-c.w.-monitor, all in the one box. 2ZC had great holiday at Forster, very active especially on 40 with the portable rig in the caravan; 2ZS was there too and both caught plenty of fish.

Not a lot of news from Maitland, but 2TY getting out well on 6. 2ADX only heard on 10 working Gs. 2AKP popped up on 40 with a nice signal, like a QSO Vic. 2DG chasing DX with good results as usual. 2VU, of Singleton, on 50 and working plenty of ZLs; gets out well on that band. Missed the associate members from Maitland last meeting, hope the code machine is going OK. Still hear Gordon 2CI on 40 metre phone, works 4WP often; while George 2SO is on 40 c.w. 2AHA nearly made history—the old sepp worked VK6s and ZLs on 50 Mc. Thanks to 2AFS, 2FF, 2ANA and pals for assistance in putting up big beam pole, 45 feet high and location 120 feet above sea level. 73 till next month from the Hunter boys.

COALFIELDS AND LAKES

Activity has been limited due to the holidays and plenty of the gang should be on again by the time these notes appear. 2KR is very regular on 7 Mc. and listens for the gang on 50 Mc. 2AEZ doing good work on 50, must have the beam going Em. 2AMU on 50 too, Len has a nice rotary 2BI amongst the DX and had a sort of QSO with VR2BC, VK6s and ZLs are only locals now. 2KF always building something, but finds time to get on 10 metres. 2KZ still the "W King" on 10, but still in trouble with Delaware; what about that 10 W.A.S. in 1950 Max? 2YO, 2PZ, 2MK, 2ALR, don't seem to be active. 2ADT generally under the car when the DX breaks on 50 Mc., but getting his share of Interstate and ZL stations. Tests regularly with Sydney and Newcastle on 144.

2YL, another one on 6, doing well with ZL and VK6, also on 14 Mc. 2VU mainly on 6, ZLs no trouble; Geoff will be going on holidays soon. 2ANU a newcomer to 6, running from vibrator supply, located at Muswellbrook. The Newcastle and Coalfields gang were favoured by a visit from 2AH, 2VW, 2HO, 2MQ, during the new year holidays. The v.h.f. gang certainly get around.

SOUTH COAST AND SOUTHERN

The Xmas party held at the Wollongong Club, 2AMW, attracted many. Lots of toasting and resultant deep voices and sore heads next day. Bill 2WP has forsaken the big bottle for an 807, and now gathering the bits and pieces for new rig. 2AMW on 20, but not much DX to date. 2PM at Canberra on 40 with BC459A using 6J7 and 6V6 to modulate same, built into xtal and magic eye space also converted one of these for 2TV who is in hospital. 2PI has small rig going nicely and new xtal mike made all the difference. 2JQ introduced his brother to Ham Radio. He was down there for Xmas. 2GU, 2TA, 2TC and 2PN are all active on 50 Mc. and they are all doing well down there. Another Ham will be on soon, an Bowning, an ex-commercial op and is located at the hotel. 6V6-807 the Tx, and with an ARS will operate c.w. for the beginning. 3OY has acquired a BC348, also had an ARS that had been through the hands of the U.S. dept. but with the aid of an axe managed to get it into shape!

2AJP very busy man re-wiring one of the alternators at Burrenjuck Hydro. 2ALS spending holidays at Manly, has new half wave 80 metre antenna, which appears to cut out the b.c.i. 2AKE been over at Bathurst and spent few days there. Jim has nothing but the highest praise for 2NS' gear. From 2YS in England comes the following news: "Ham Radio is the same wherever one goes and the Gs certainly made me welcome over there, one loaned me a Rx. The 160 metre or top band is the most popular for local chats, 80 metres is popular too and 40 is like the American phone band on 20 when conditions are good. A.O.C.P. examinations are held once a year and licence fees are 10/- a year for 10 watts, £1/10/- for 25 watts, and £2 for 25 to 150 watts. I have been to many society meetings (R.S.G.B.) and also visited the H.Q. Amateur Exhibition, a week was spent at 'Radiolympia.' I hope to contact the VK gang through one of the G stations. Disposal gear is very cheap, SCR522 £1/17/6, BC348 £15, 832 tubes 10/-. The many t.v. antennae around London gave me the idea that every Ham was on 6 metres! All the best to the gang, especially to those at Canberra."

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VICTORIA

MOORABBIN AND DISTRICT RADIO CLUB

The December meeting was held on 6th at the club rooms, and a very large membership was present. The President (VK3KE) occupied the chair and in the absence of the Secretary (working), the Assistant Secretary read the minutes. A welcome was given to a number of visitors by the President.

A very fine lecture on the Cathode Ray Tube was ably given by Len Jackson (the "Lenfo" beam expert), ably supported by John Dawes and Ed. Manifold (3EM). These gentlemen brought all the gear and after questions were asked and answered, a vote of thanks was heartily passed by all.

Application has been made for a transmitting licence; also for membership with the W.I.A.

The next meeting will be held on 7th February, when films will be shown.

CENTRAL WESTERN ZONE

Amateur Radio lost a good friend and the Bush Fire Nets a regular station, with the sudden passing of Joe Graham, VL3KR, at Ararat, just prior to Christmas. We shall miss him at the Conventions (especially those quiet little stories of his). To all his relatives and nearer friends, we offer our sincere sympathy—"he was a good scout."

V.H.F. activity stirred slightly in the zone during the month with a cross band contact on 144 Mc. between 3DP and 3AKP. Jim had the Tx and Keith a super-regen. Now the stage is set for that endless quest of bigger and better sigs., antennae, and what have you—we certainly are a restless lot.

Our newest Ham, VK3AJO, is busy building up a nice flash transmitter. John wrecked the AT5 and is busy on a rack and panel job relay controlled and with fast approaching holidays, Stawell's b.c.i. should get progressively worse. 3AKW now has the re-built RA10 going and finds the double conversion to 100 Kc. very nice indeed.

For the information of other zone members, it was decided at the last zone hook-up to build a combination power supply for the Bendix freq. meter, 6 volts d.c. or 230 volts a.c., so that it can be used on the farm or in the towns.

Just in case it may have slipped your mind, zone hook-up is on the second Sunday of each month at 10 a.m. on 7150 Kc.

SOUTH WESTERN ZONE

3IO reported on sick list, has however been working a bit of DX on 20 metres. 3APG broke the silence by coming on recently with a power of 20 watts. He is going to reconstruct his G8PO beam. 3ABK will be leaving for a while but hopes to be able to get home each week-end. 3BU has been working on 6 metres, also 3AKE. 3CM has been quiet lately, perhaps he is thinking of going QRO and studying it out. 3ALG worked VE1GG on 20 metre phone, his first DX phone contact. 3ABE and 3AJT have been working on the 20 metre band on phone. 3AJT heard putting out a very f.b. sig and got 40 db over the 9 from a VK4. His four element beam is on the way but believe he is using a doublet with 60 watts input.

Quite a bit of portable work was done over the holidays. 3BU took his gear away and 3ALM using his ATR2B at Torquay with a nice signal. Using that dog-leg long wire Lloyd? 3ASV and 3HW chasing fish and ZLs at Wye River without success!! Heard 3WT working a KH6 and getting nice report, using the big rig Bill? 3AJT has been in the Western District with 3AKE and understand the car gave trouble John. 3VA visited Geelong but found most of the boys out.

Hear 3UT getting his share of DX. Vee beams seem to work OK Wal. 3AMH has two element beam up and getting good reports. Still can't work all he can hear. G3AEA visited 3AMH on way to motor-bike races. No doubt about the beams for catching the eye. 3HW mumbling about a couple more reflectors on the present four element beam. That is all for this month boys, if your name is not mentioned, it is your fault.

NORTH EASTERN ZONE

Once again your scribe (3YV) is faced with the problem of compiling notes for this column and once again his appreciation of John Miller's efforts in the past is very high. Over the past few weeks very few of the zone boys have been heard on 40 metres, maybe it's the holidays, maybe DX on 20 or 10, or maybe it's the v.h.f. bands; whatever it is, no one has reported any activity.

Several contacts have been made with ex-zone member Doug of 3DW, who is emitting a fine signal from Woodend and appears to be quite happy down there; best regards from the zone Doug. 3YV has completely re-built his speech amp. and modulators, the line up now is: 6J7, 6L7, 8N7, with 2A3, driving 809s. 3JK landed an 18 and a 5 pounder (Murray Cod) and is still chasing them. 3KR still the zone's most active Ham on 40 metres. 3YV gave his shack a grand clean out for Xmas, also had a visit from 3ZP.

3KR has again erected his W8JK beam and is having lots of fun with DX on 20 metre c.w. 3HP has prohibited all bush fires in his area until after the harvest. 3YV spent a few days holidaying in Ballarat early in the New Year where he met 3GR, 3MH 3BE, 3ALN, 3ABJ, 3DS, etc. His thanks go to Bob, 3GR, for showing him around. 3ACW paid a visit to 3KR on New Year's Day. All members of the zone wish to convey their deepest sympathy to Tom and Jack Speer in their recent sad bereavement.

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QUEENSLAND

The news from Divisional Headquarters this month is very scarce. Owing to the very poor conditions prevailing on the 7 Mc. band, little has been heard at this location of the 4WI broadcasts. It appears that little business has been done owing to the fact that Councillors have been otherwise engaged at Christmas and New Year festivities.

By the time these notes are read the financial year of the Division will be at an end. Once again members will be called upon to elect a new Council. During the past year there has been a lot of criticism, just and otherwise, of the work done by Council. Some of the old Council will not be candidates for the new Council as they have found, like previous Councillors, that their efforts have not altogether been appreciated. It is well to remember, that these jobs have to be carried out in spare time and unless one is prepared to sacrifice his domestic ties, the spare time at his disposal is not enough to carry out the duties to the satisfaction of most.

It is sincerely hoped that each and every member will give his ballot paper careful consideration, and we remind all that it is not only a privilege but a duty of each member to register his vote. It is further hoped, that greater interest will be taken by more members in the official duties, and thus obviate the saddling of a Councillor with more than one duty. We would like to remind all members that subs. are due on the 1st March, 1950.

The outstanding features of the work done by Council during the past year were the establishment of an Emergency Network, the introduction of C.W. Transmission of Morse Practice over 4WI, and formation of a Technical Committee. Membership shows a slight increase of approximately 30 members.

ZONE NEWS

Mackay (4KW).—4EW has moved to Brisbane. 4BJ is a new Ham and is on 14 Mc. band with low power. 4BQ is preparing to move to the country and has built up a genemotor powered job for the new QTH. He has been active trying out the new rig before he moves. 4KR now has a 50 ft. steel tower and is building the boom to go on top with a four element on 20. 4FH once again shifting to a new QTH, believe John is going to give 4KR some QRM. 4MA has been active after a long recess and has been heard the last few weeks on low power.

4AM now installing a v.f.o. Visitors at Mackay during the first part of December were 4MV, from Brisbane, and 4BJ from Bundaberg. After many weeks of poor conditions on the 14 Mc. band and thus being unable to maintain the weekly skeds with 4KW, it was due to short skip on the 28 Mc. band that we were able to contact the zone manager 4KW, and so once again put the Mackay zone into the notes.

Townsville (4QD).—Here again short skip enabled us to contact 4QD on the 28 Mc. band. QSB prevented us from getting more than one item of news, that being that 4RW is now using a two element rotary beam on 14 Mc. fed by 75 ohm ribbon.

Bundaberg (4XJ).—4UK has recovered from his illness and doing very well on 7 Mc. band. Frank is not satisfied with his band-switching rig and may change over to plug in coils. Our old zone manager, 4BJ, has given radio away for the time and has sold out all his gear. We believe that Jack, 4OW, has a shack full of surplus gear now, and has found time to erect the 4BJ tower in his own back yard, and hopes to have the beam going soon. Heard 4HE on 7 Mc. phone from the new QTH. 4XJ settled back in Bundy and heard working some nice DX on 10.

Gympie (4HZ).—4OR very quiet lately. 4XR has a rotary folded dipole doing yeoman service, however we believe Eric has some dural for a new beam. 4LN playing around with a DR10n converted to the 7 Mc. band. 4RA has a new harmonic. 4HD is torn between two desires—one to keep an eye on the 6 metre band for that big break through to the Ws, the other to work all the DX coming through on the 28 Mc. band. Judging by what we have heard at this location, you have been kept very busy Max working the Yanks on 10. 4HZ has an extended double zepp, which Jim is thinking of extending into the 8JK beam. Nice work Jim, working the Yanks and that XZ on 20.

Darling Downs (4CG).—About the only item of interest is the 6 metre band. 4XN and 4CU are getting their share of the 50 Mc. openings. The 14 Mc. band has been off at night, only stations being heard were VK3, VK5, and Asians (especially the Ham Band Commercials). During the month, 4CG worked VP1, TA3, EA, DK, AP, and the usual DX. The 28 Mc. band has been good with Ws and VKs in the morning and patchy openings to Europe at night. 7 and 3.5 Mc. are useless most nights. 4DA and 4RF inactive. No news of 4KR, 4WY very active on 7 Mc., particularly in the mornings.

Brisbane (4EL).—4RC, with a new exciter unit (6V6, 6N7, 807), put up a huge score in the CQ Contest using all bands and 35 watts. 4GB installed a brand new 813 in place of the p.p. 824 and is doing well with the DX, heard a lot on 28 Mc. 4GE, welcome to Brisbane Ernie, noticed you calling CQ on 28 Mc. Will be interesting to see how the new location compares with that Mango and Grapefruit Grove up in Townsville. 4FJ has been mighty busy knocking over Europeans galore, with a nice new three element beam. 4AP, as is usual these days, piling up the DX due mainly to the excellent antenna arrays used. Alf goes into the antenna business thoroughly and keeps careful record of the various types used. The latest, a three tier stacked array of multi elements, enables him to work DX that can't even be heard by any one else. Nice work Alf!

4GJ is heard with a beautiful T9X QRI that is emanating from the good old Clapp oscillator. 4RT was heard on 28 Mc. with nice quality phone and also heard on 7 Mc. phone. 4EN is threatening a "come-back" on all bands, so hurry up Eric, that familiar copper plate fist is missing as a good example to the boys. 4HR, old Tibby, was heard talking of trying the new "frequency modulation" with just a 1N34 diode and a mike for the modulator. 4EL was first reported to be a commercial in the 7 Mc. band recently, but turned out to be old Eric knocking over Ws in the recent "CQ" Contest, at a terrific rate, and is believed to have scored 5,100 points on 7 Mc. alone. Eric has just completed his 290th QSO with G5ZA. 4KH, everyone will be glad to hear that Bill is slowly recovering from recent "toe" trouble, and after leaving hospital minus a "big toe" is well on the way to recovery. 4JA has built yet another receiver and is talking of beams of the rotating type, running 50 watts to an 807 final plus a Clapp. 4XG seems to be doing very well with his "plumber's delight," knocking over Europeans on 28 Mc.

SOUTH AUSTRALIA

The monthly general meeting for December took the form of a Xmas social and to say that it was a success would be a gross understatement. 5LW, who shouldered the main job of organising the social, deserves all the praise that has been bestowed on him by those present. The function in previous years has always been of a joint nature between the W.I.A. and the I.R.E., but this year it was only the W.I.A., the I.R.E. having held their social some time before. Incidentally apologies were received from Mr. Tyrrell (President) and Mr. Goverlock (Secretary) of the I.R.E., regretting their inability to attend. A short resume of the night's doings will not be amiss, and with Ross Kelly as compere (and an 88 plus 43 db one at that) the social started off with a bang. The toast of the King was proposed by the President (Hal Austin, 5AW), and that of the visitors by the Secretary ("Doc" Barbier, 5MD). "Doc's" experience in welcoming visitors stood him in good stead in this case, that's what Ross said anyway. The Chief Radio Inspector (Mr. H. K. Burbury) responded in a very pleasing manner to this toast, and stressed the amiable relations existing between his Department and the Amateur. The toast of the W.I.A. was proposed by Dougal Whitburn, 5BY (and who would be more fitted to do this), and the President responded with an excellent speech. The show was kept going at top speed by Jimmie Mundy (comedian), Mel Whitbread (piano accordeon), and Ted Jobbins (magician). The tucker was excellent and everybody left for home more than satisfied with the Xmas Social of 1949.

My spies tell me that some of the VK5 boys were discussing recently as to whether the Xmas social should be wet or dry, and 5GF very dryly said, "why not hold two Xmas socials, one for the wets, and one for the drys, complete with a Xmas tree with pretty lights for the drys. Very subtle, very subtle. Owing to the call of duty I was unable to attend the social, and I was very sorry to miss the magician, as they tell me that some of his tricks were a knockout, especially the one where he plucked rabbits out of the air, and hares from somewhere or other. I always miss out on the good things.

The approach of the Festive Season, plus the very ordinary conditions existing on nearly all bands apparently caused the average Ham to desert the air, and consequently I have heard very little gossip this month, although 5JW seems to care little for conditions or the Festive Season, because every time that I switched on the receiver he was in

contact with somewhere or other. He is fast assuming the mantle of 5JS. Another one who always seems to be on the air is 5WF ("Inky" to you), who seems to have more tests to conduct than an English cricket eleven.

5LW and 5GF went off to Cape Jaffa again for the Xmas holidays and mixed radio (on 40 and 6) and the crayfish with varying success. Was in QSO with 3BH (Charlie) the other day, and he spent quite a while in telling me that he always read the VK5 notes, and he also said quite a lot of nice things about the bloke who writes them. I was so overcome with modesty Charlie, that I was not game to tell you that I was the culprit, but thanks anyway, although I bet you say those nice things to all the scribes you meet.

Well my cup of happiness is filled to the brim, why? Because the Editor of this magazine sent me a Xmas card. Talk about walking on air, why I wouldn't change places with a king. Just to think of it, a lowly person like me receiving a card from such a high personage like the Editor. Jokes aside Tom, many thanks, and the wishes are reciprocated heartily, although I must admit I am looking for the hidden "crack" connected with the front page, hi, hi.

Listening on the air and from conversations with other Hams that I have had, convinces me that we are a very touchy mob of chaps. Praise our signals, pat us on the back, fill us up with all the heifer dust that you care to dish out, and we will reckon you are the best fellow in the world, but, and believe me it is a big but, just say the slightest word about our overmodulation, our asinine habits on the air, our general selfishness and lack of consideration for the other fellow, and look out, we will pick up pen and ink, and in an endeavour to allbi ourselves out of your accusations, we will descend to any depths. The "Old Man" has probably discovered this peculiar fact by now, and while I hold no brief for him (if he blisters me for splatter or something, I will cry pistols or swords with the loudest of them), I think even his worst critic must admit that his little bit of philosophy in the last month's issue was a gem. Nothing that we haven't heard before, but expressed in such a sincere manner, that we must concede him he certainly knows his amateur radio. Giving him all this in, if he dares to print anything about me, I will sue him, I will write a letter of protest to the Editor, in fact I will even deny whatever he has the audacity to accuse me of.

5XU, our genial Treasurer, has resigned from the Education Department and will take up the position of science master at Prince Alfred College in the new year. Gordon is one of those serious minded coves who tackles all and any jobs with determination and sees them through to the bitter end, and deserves any break that comes his way. Best of luck in your new sphere Gordon, and at least I can always say that I knew you when! Incidentally, have they a pipe organ or a wurlitzer at Prince's, you little devil you.

5WM, the man with the pipe, is sporting a little beaut at the moment, it reaches down almost to his knees in a series of curves and twists, and does it pong? Well, as he walks down the street, strong men faint, dogs howl, women clutch their children, and quite often the police call out the fire brigade, fair dinkum.

Speaking of "The Old Man" earlier, and his philosophy, reminds me of that one time stalwart of Amateur Radio, Mayo Richards (5WR). Mayo has long since passed on, but I remember one night after a general meeting, a bunch of the boys were debating out on the footpath as to which was the most important, the aerial, the receiver, or the transmitter. The agrument waxed fast and furious and at last we appealed to Mayo to settle it. In his usual quiet manner he just paused, and then he said, "which is the most important leg of a three-legged stool." The argument came to a sudden stop, and several loud-mouthed individuals went home convinced that there were many sides to Amateur Radio beside their own.

Members of the Advisory Council in all States attended their last meetings this month (December) and even if no obvious results of their work are visible, the average Ham should feel very pleased that a body of fellow Hams have been prepared to give up a good deal of their valuable time to act as buffers between them and the Department. Personally, I make the suggestion that next year's Council consist of all the Hams who have, at some time or other, belittled the work of the Advisory Council. Better we get a "Pro-forma" from the Council, than a kick in the pants from the Dept.

My old sparring partner, 5BZ, has been reported as being a little off colour, but I met him the other day and I am pleased to say that he was looking quite OK again. Glad to see that you are sparking on all six again Cec. 5LR is on holidays at the moment and is mixing gardening and swimming at the time of writing. Jack was Father Xmas at the 5DN staff party recently and did a great job. He told me that he had brought me a pony for Xmas but it had got away from him and he was sorry. He even produced a cardboard box with the proof that the pony had been with him for a little while, but I still don't believe him. Anyway what would I have done with a pony. Don't answer that.

5JA was very surprised on the morning of 4/12/49 to hear some VK4 sigs on his six metre receiver which were R5 59 at times, and John thinks that he also heard some VK5 sigs as well, but they were too weak to copy. 5MS when last heard of was busy getting enough tubing together to make a 20 metre beam. Not another aerial Stewart? 5KU has been getting the most out of his 10 watts input by working Yanks on 40 metre c.w. Nice going Eng. 5FD has only been on the air since shifting to his new location, about three times. This shifting business takes time, doesn't it John. 5TW has been building new test equipment and also had the misfortune to lose his "cubicle quod" in a recent storm. What did you say Tom? 5CH has just built a new frequency meter and has the job of calibrating it in front of him. Claude's new transmitter is at last finished so the QRM should increase now. 4CJ, who is my highly paid spy from the South East, is a proud father, an 8 lb. 14 oz. son, born on polling day. The only information that I have not received is the harmonic's name, what about it Col. One of his "friends" suggested that he would probably work a lot of DX in the early hours of the morning. However, both father and son have so far shown a decided liking for sleep, although time might show up any variations. Congratulations Col., glad to know that you came through such an ordeal with flying colours. We fathers certainly do have a trying time! Talking of fathers, I must let you know that "Pop" Deans, 5LD, is also the proud possessor of a fine bouncing boy, to wit, William Ashley, Congrats Launce.

Heard Bert Winter (5DR) on the air with telephony on 40 metres the other day, welcome Bert, and hope that we meet up some day.

I have always had a nasty suspicion that the Secretary and the President of the VK5 Division of the W.I.A. sometimes tell little white lies, and at last, after many years of checking up on their statements, I am in the position to produce infallible proof of their double dealings. I realise that this statement is a dangerous one, but I am going to stand by it. My proof is a written one and can be checked up at any time. According to them they were invited to the I.R.E. Xmas Social, and I have their word that they were definitely present, yet in a prominent trade magazine is a write-up of the gathering which includes a list of the important guests, and are Hal and "Doc" mentioned, no sir, they are not. If they had been present, don't you think that the I.R.E. would have said so, no sir, they wouldn't have, I mean yes sir, they would have. Do you require any more proof? Take my advice and vote for Parsons the Perfect President. I say I am terribly sorry, the recent elections seem to have carried me away. My apologies fellows!

Dr. Ross Adey (5AJ) left for England recently and our good wishes go with him. He is a real good scout and we are sorry to see him leave VK5, although we will have the privilege of working him under a G call, we hope. During his sojourn in G land I will endeavour to reduce my girth, and when he returns he will not be able to tell me that I am a sitter for "vernier" or something.

They tell me that a certain picture theatre out at Prospect gave its patrons quite a shock the other night when right in the middle of a passionate love scene the heroine, instead of saying indignantly "NO" to the hero's blandishments, said instead, "hullo VK5ZL, hullo VK6ZL, this is VK5MK calling VK5ZL." This went on until the audience, having had all it could stand, started to wander out into the vestible which, by the way, was covered in hair, the said hair having been torn out in great chunks by the hysterical projection staff and management, to whom the mere mention of the words, "Radio Amateur" is sufficient to cause their blood pressure to rise to 46 db over S9. How could you Ron!

Had a visit recently from VK2ANR who seemed to be enjoying himself in the fair city of Adelaide. He was shown over the best broadcasting station in VK5, met the rest of the gang who were on duty, and then came upstairs to the workshops and chatted to us whilst we toiled at our various highly skilled experiments! He seemed amazed when the office boy arrived to throw water on my face to revive me because I had been working too hard, although I assured him that this was not always necessary as I often came around unaided. Norm seemed a good scout and we were all very pleased to meet him. We tactfully searched him as he left, to no avail, as our lathe is still missing.

5XK writes to say that there has been an increase of one hundred per cent. in transmitters on Kangaroo Island, his own and that of Bert Winter, to whom I referred in an earlier paragraph. Arch, and many more of the boys mentioned the call sign of 5DR and the station at Darwin, but I made a few discreet enquiries from a reliable source, and was informed that it is quite possible for a broadcast station and an Amateur to have the same call, but the broadcast station does not have the prefix VK. All right, you make some enquiries. Thanks for the greetings Arch and Bert, what about putting me in on those W and VE contacts that I hear giving you R5 and S9. Don't be greedy Arch.

Haven't heard 5LH lately, we will have to start the Bureau of Missing Hams working on the mystery. 5AX has gone to Mt. Gambier for a trip, so we might hear him from one of the South East boys' shacks. 5AP is very busy making up a new receiver which, from all accounts, is going to be a "sooper-dooper." Heard 5RJ tied up in the Northern Net the other Sunday, and his mike cable was tied up in a youngster's playground and it was being dragged all over the room, much to the said youngster's enjoyment. 5MA is also busy putting up aerials, possibly with the idea of cornering some of the DX I hear about, but seldom see. 5UX was heard portable on the River Torrens with a Type 3 Mk. II, with an extra good signal; nice work Les. 5PH has a new 12 tube Bendix receiver. I'll bet that took a few notes off of the cornet, Perc. 5VM is also reported as a missing person, therefore he cannot be given any publicity this month. Many thanks Perc. for the notes, keep up the good work.

Jack Coombe is spending a holiday at American River and is using a portable with the call sign VK5MR/P, and this makes three transmitters on Kangaroo Island. Quite a gala month for the marsupials (very funny, very funny). Was snooping the other night trying to glean some news from the c.w. boys and sat in on a QSO between 6WZ and 5MD. Nearest approach to commercial working that I have heard fellows, but the part that I liked was the remark that the better three quarters of 6WZ was a keen reader of mine. My salutations and other expressions of goodwill to Mrs. 6WZ. I received recently a QSL card from 7BM in which he accused me of being the "Old Man." Rupert have you forgotten that there is such a thing as the law of libel. The only thing in your favour is that I have been accused of that several times lately, and therefore I take the opportunity of now publicly denying such an aspersion. Convinced "Roop."

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WESTERN AUSTRALIA

There having been no December meeting of the W.A. Division, there is naturally little to comment on from official quarters. From observations on the various bands over the festive season it would appear the majority of VK6s had an enjoyable time at Xmas. As we are beginning a new year in Amateur Radio and it being the usual time for formulating resolutions, we may or may not adhere to, the following observations may be considered relevant.

A considerable number of Amateurs these days are keen participants in a headlong race to qualify for admission to that exclusive fraternity having as its entry fee confirmation of contact made with Amateurs in a hundred different countries. While this is a laudable ambition providing a deal of satisfaction to the persons fortunate enough to make the grade there are some who take it just a bit too seriously and cannot waste time in a QSO in case they miss a "rare one." Their QSOs follow a boring pattern of "RST pwr. wx. pse. QSL and 73." They are always in a hurry to squeeze in a few more QSOs while the band is open. In this way they miss a deal of the satisfaction to be derived from getting to know the personality behind the call sign. A little time spent in really making the acquaintance of the Amateur himself and not just the call sign adds enjoyment to this hobby of ours. As to the coveted 100 countries, they'll mount up in time. Anyway when you have them, what then? Probably you'll set to and start to have a few real QSOs!

PERSONALITIES

6RU busy settling down in his new QTH, couldn't resist the urge for long. Without waiting for that beam, Jim hooked his 813 to the clothesline and landed an AC8. Did it dry the clothes faster Jim? Another experimenter at heart is 6PJ. He tried dropping his xtal mike—it didn't bounce! Also minus a xtal mike is 6RS, due to an over inquisitive junior harmonic making a reconnaissance around the shack.

Ever-popular ten metres has a good gathering of locals these days. Included are 6LL, 6CM, 6JW, 6NL, 6LM and a few spasmodic visitors. Heard 6FB being answered on ten so he hasn't given the game away entirely. A highlight of the six metre activity was 6DW's fine effort in contacting ZL1TO. Nice work Don. Apparently the a.c. has reached Bruce Rook as 6DW has high power on all bands now.

Breaking a long silence, 6AK was heard exchanging seasonal greetings with the gang on 40 metres on Xmas Day. 6WZ tried to do likewise but found he could transmit but couldn't hear them. Finally tracing the trouble to an open in his ribbon feeder, Harry had to wait for several days till 6CN arrived and between them they narrowed the break down to six inches, then scrupped it. After a long spell of brass pounding, 6FA has installed cathode modulation for Xmas. 6WG broke the 7 Mc. silence from Albany on Xmas Day with tales of great doings on six metres. 6GU's receiver

is headed for a re-build so 6JP has stepped into the breach and loaned John another. Talking of 6JP 'tis said Jack has gone high power! Now squeezes a full 15 watts from genemotors running on a newly installed 32 volt lighting system. Jack is not sure whether to be pleased or sorry that the a.c. line finishes a mile short of his QTH. At least while most metropolitan VK6s are victims of that hour of power racket, again he can boast continuous power.

A newcomer heard on 7 Mc. is 6BP with 50 watts of f.b. plate modulated phone. A strange small voice calling in the wilderness of forty was finally identified as 6MY. Glad to hear you about again Mal. Another who could also be almost classified a stranger was 6MG putting Manjimup back on forty. Said to be haunting shacks in the Perth area is 6DX of Kalgoorlie. Hope you enjoy your stay this time Bill. Heard at intervals on various bands pursuing their favourite hobby have been 6MK, 6KW, 6EW, 6RK, 6BO, 6HW, 6FW, 6ND, 6GS, 6WU, 6YZ, 6AS, 6SA, 6RW, 6CF, and 6DD. So long chaps, see you next month.

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TASMANIA

At the General Meeting held on Wednesday, 7th December, present were Messrs. Jensen (in chair), T. Allen, F. Gee, D. Watson, M. Watson, Millin, Evans, Richardson, Fulton, Anderson, Sidebottom, Porthouse, Brown, D. Davis, D. Smith, Hall, Cannock, Cruise, and Allanby. Apologies from Messrs. Clarke, Excell, Barker, Nicholls, Oldham, A. Allan, C. Walsh. The lecture given by Mr. Max Sidebottom on Relsyns, Gunsights and what have you, was much enjoyed by all and was interspersed with numerous humourous anecdotes (that's putting it politely).

Geoff Clarke, 7TA, was voted into the temporary position of writing these notes, and also in company with Max Sidebottom (it's that man again), was co-opted into performing on the Social Committee to organise the Annual Dinner, etc., which will take place on 4th March, at 7.15 p.m., at a certain restaurant one floor below a certain b.c. station at 82 Elizabeth Street, Hobart. Collections of five bob a head will be taken any time between now and dinner night or then no cash, no dinner.

January meeting lecture was by Mr. Allan Morrisby on 144 Mc. gear and the additional display of gear really got the lads in. Looks as if two will at last become active (we hope). 7BM and 7AJ assisted with their own findings.

ANNUAL STATE CONVENTION

All Northern and Country Members are requested to contact 7OM, 7SK, 7TA, or their Divisional Secretary before 18th February. It's your own fault if you miss out.

POISONALITY PARADE

I haven't slept too well after last month's effort, but here goes again. From 7OM, he worked VK1AJT, Macquarie Island on 14 Mc. phone. John was having hum trouble. When it disappeared later, Bob called him up again and reported it. John has v.f.o. controlled rig and is on various parts of 14 Mc. band with no particular place of abode. Was intrigued to hear that we had snow on mountain, as temperature at time there was 75 degrees and weather calm.

The month's visitors included VK5NV and VK2ARG/AMC Mobile. Former hails from the Garden City, but although I had a yarn with him I can't even remember his name, though could run through his rig for you if needed. He and his XYL were vacationing. The second visitor, Bob Rodsall, is the well-known six metre DX man, and after quite a chase, 7DH and 7AJ ran Bob to ground in the taproom of the poshest pub in town and got the inside gen on v.h.f. doings in VK2.

Local DX. Well Joy, 7YL, was heard calling CQ 20 on a practically dead band, when back comes YV5AZ. Some of you married men had better let the XYL do the calling in future. Then DX should come easily. 7LJ has at last returned to the ranks of the phone gang with an f.b. modulator using AB1 807s, and within half hour of its completion received a 5-9 report from VK4 with nice quality. Lon also has new masts in hand and looks like new antennae are order of the day. 7AF has finished new deck console which would put many a b.c. station to shame. K2UN looks "Amateurish" alongside Bob's layout, and that's saying something. But Bob you still haven't got single switch station control or provision for v.f.o. netting.

It mightn't be a bad idea if all OMs were to read Page 492, 1949 edition of A.R.R.L. Handbook. Can YOU answer YES to all five of those questions? If you can't, then it's about time the shack was re-organised. 7AF's new receiver is completed—shades of the AR7. 7CT, of Huonville, on 40 again like a ghost from the past—mighty vocal ghost too, Terry. 7EJ gone to live at Longley, and found ex-G5VF right alongside—well they say it's a small world. 7TA vacation bound by now and probably will be heard from most shacks between here and Timbuctoo. Will be in VK2, 3 and 5 over a period of three weeks.

A competition for auxiliary gear construction will be held and judged by a panel of professionals at the Annual Dinner. Emphasis is of workmanship, and item must not exceed one cubic foot in volume and must be accompanied by a statement signed by two reputable members as to the working order of the item. Mr. Len Crooks has kindly donated three guineas as first prize, and there will be other prizes also, so do your best chaps. Competition is open to all members and associates and Northern entries welcome. Bring 'em along to the Dinner and DONT FORGET the signed statement.

NORTHERN ZONE

Owing to the holidays, activity has been rather limited, also as the only stations operating have been on 50 Mc., I cannot comment here. 7PF having fully covered these activities for inclusion in the v.h.f. pages.

As I write these notes a message has sneaked through via the grapevine that it has been arranged to pass a vote of hate at our next meeting against a local Amateur who heard a VK3 on 144 Mc. in Launceston and then lost the piece of paper he wrote the details on.

7BQ is on holidays in Hobart at present and we are all waiting to see how much new gear he will arrive home with. 7RK is more interested in building a new receiver than in operating. 7PF busy chasing DX on 50 Mc. and in the "in-between intervals" is constructing a 144 Mc. beam. 7AM has also been bitten by the building bug, the latest being a super for 144 Mc. 7LZ also busy trying to draw up a roster so that 50 Mc. will open the nights I am at home. At present all the gang rush home and listen on 50 Mc. as soon as they know I am out. This system has helped their scores considerably in the v.h.f. contest.

Once again the old, old saying, "once a Ham always a Ham," has been proved true. Many an old timer will remember Chris Cullenan, ex-VK3XW. Chris has now renewed his licence and can be heard on 7 Mc. phone quite often as VK7XW. Welcome back to the ranks Chris.

Have sighted a few strangers in town wearing the W.I.A. badge, but until today I had managed to dodge them. This afternoon my luck gave out because 3OJ and 3JO caught me unawares so it looks as though my last bottle of Xmas cheer is due to become extinct. Anyway I suppose it's for a worthy cause.

The next zone meeting is to be held at the King's Hall, Launceston, on 10th February, at 8 p.m. All are invited to attend.

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CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

INTERFERENCE TO AIRCRAFT

Dept. of Civil Aviation,
522-536 Lt. Collins St.,
Melbourne, C.1

Editor "A.R.," Sir,

During the last few months, aircraft flying in the Melbourne area have been experiencing interference on the control tower frequency of 118.1 Mc., the interference manifesting itself as a broadcast station programme.

2. The characteristics of the interference indicate that it is a cross-modulation effect, the factors leading to this deduction being as follows:—

1. The interference is intermittent.
2. The signal strength varies.
3. The quality of reproduction varies greatly.

3. With cross-modulation, two interfering carriers are necessary, and, although identification of the broadcast station provides evidence of one carrier, the identification of a possible second carrier is presenting many difficulties. One possibility under consideration is that an Amateur operating in the 28-30 Mc. band, and in particular on 29.5 Mc., has an installation which gives fourth harmonic radiation as well as the fundamental frequency.

4. It would be appreciated by the Departmental Officer investigating the interference if members of your organisation who hold amateur licences would check their station logs to see if they have been operating on the frequency band indicated at the dates and times listed below:—

Dates	E.S.T.	Dates	E.S.T.
14/9/49	1047	12/10/49	1826
22/9/49	1842	13/10/49	1155
24/9/49	2037	14/10/49	1121
25/9/49	—	23/10/49	1821
1/10/49	1736	28/10/49	0856
2/10/49	1535	3/11/49	1055
7/10/49	1435	21/11/49	1535
9/10/49	1640	22/11/49	2234
10/10/49	1640	3/12/49	0858
11/10/49	1340	5/12/49	1514
12/10/49	1405		

5. The limitations of the particular frequency band are fully understood, and it is realised that the dates and times listed above may not coincide with the periods when the band is useable because of ionospheric conditions, but any information forthcoming will be greatly appreciated.

6. As the elimination of the interference is important from the point of view of safety to aircraft, an early return of any relevant information would be very helpful and greatly appreciated.

—W. L. MILNE,
for Director-Gen. of Civil Aviation.

PIRATE! PLEASE NOTE!

Railway St., North Woollongong, N.S.W.

Editor "A.R.," Sir,

I would be pleased if through the correspondence column of "Amateur Radio," you would inform the "gentleman" who is using my call sign on 40 metre phone if he cares to send me a stamped addressed envelope he can have the QSL cards I have for him.

—K. BRADY, VK2AFF.

HAMADS

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